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A SUGGESTION ABOUT PRISMS.

By JAMES WALLACE, M. D.,

ASSISTANT OPHTHALMIC SURGEON TO THE UNIVERSITY HOSPITAL, PHILA.

The conflict of opinion, in regard to which shall be the standard of comparison in prismatic lenses, still wages with undiminished vigor, in despite of the fact that to the centrad has been awarded the preference, by so august a body as the American Ophthalmological Society.

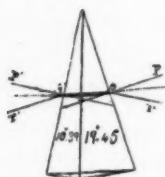
The prolonged discussion of the subject of prisms, by men of original thought and mathematical ability, has served to make clearer in the minds of all ophthalmologists, the actual value of prismatic lenses in deviating light, and their relative values to convergence, and the decentering of spherical lenses. It can hardly be expected that any ideal prism, such as the centrad or prism dioptré, can ever exist outside of the ophthalmologist's office, for the reason that the burden of calculation, would necessarily be thrown on the optician, whose business is to make glasses according to the pattern of his tools, and not to base them on their deflection of any particular ray of the spectrum. It is true that the optician can pick over his prisms, until he finds one which will deviate light .01 of the radian, but when he has a spherical to grind on one surface and a cylinder on the other, there is no method by which he can combine a prismatic lens, excepting by grinding the two surfaces at a definite angle to each other. It is strictly the province of the oculist to diminish or increase the power of such lenses, by decenteration. While it is true that a prism of 10 centrads, over one eye, produces exactly the same deviation as two prisms, of 5 centrads each, placed one over each eye, with their bases opposite to each other, yet in practical work, with one eye covered by a prism base down, for ex-

ample, to produce vertical diplopia, if it is required to measure the horizontal deviation of the visual axes, and the degree is higher than that of any single centrad prism in the trial case, two centrad prisms must be placed together over one eye, in order to correct the deviation; such a combination is not equal to the sum of the centrads employed, as the following will show, this demonstration is also applicable to the prism diopetre. For the sake of convenience, I will make use of the careful tables of Dr. Randall, which were presented at the last meeting of the American Medical Association. We will assume a case where the deviation of the two visual axes is corrected by placing over one eye, two prisms, one of 10 centrads* and the other of twenty centrads, with their bases together.

The combination does not equal 30 centrads but 35 centrads:

10 c. r. equals (Dr. Randall's table) refracting angle of	10°. 39
20 c. r. " " " "	19°. 45
	<hr/>
	29°. 84

Fig. 1.



35 centrads equal 29°. 72, which is almost exactly equal to the aforesaid combination. Placing the two prisms together by corresponding faces, in the position of minimum deviation, we have a prism of 29°. 84 refracting angle, equal to 35 centrads. As the disparity between the refracting angle and the deviation, rapidly lessens, as the refracting angle increases, (with the lower degrees of prisms, the relative value of the two, is nearly the same, ($\frac{1}{2}$)) it is with the higher numbers that the importance of this relation deserves recognition, the higher numbers of prisms are not found in the trial cases, therefore they must be produced by combining two or more prisms of lower degree. The figure shows a deviation produced by two prisms placed together.

"Brevity is the soul of wit" because the acuteness of mental perception becomes dimmed, by being too long held in suspense; clearness of comprehension, requires terseness in description and harmony between the idea and the character which designates it.

To facilitate the rapid transcription of ideas, they must be divested of all unnecessary phrases. The sign D. indicating diopetre, is not essential to a formula for glasses and is generally omitted. A simple method of designating prisms, which is somewhat picturesque in it

form and which enables the oculist to see at a glance what he has ordered, and prevents the possibility of a mistake from the misuse of such unimportant words, as in or out; up or down; is to adopt as the symbol for a prismatic lens, a triangle, the direction of the base, indicating the relation which the prism bears to each eye and the number of the prism to be placed inside of the triangle, thus:

Fig. 2.



Figure 2 indicates a prism of 2° over each eye with its base toward the nose.

Fig. 3.

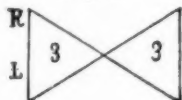


Figure 3 indicates a prism of 3° degrees before each eye, with its base towards the temple.

Fig. 4.

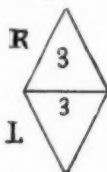


Figure 4 indicates a prism of 3° before each eye, with the base downwards over the right eye and upwards over the left

Fig. 5.



Figure 5 indicates a prism of 2° with its base upwards over the right eye and downwards over the left. Appended will be found a table giving the deviation produced by a single prism, with its base situated obliquely to the horizontal or vertical meridian, equal to the combined effect of two prisms, with their bases at right angles to each other.

For the benefit of those who dispute the equivalency of the oblique single prism, to the combined prisms, we also insert the following simple expressions:

Fig. 6.



Figure 6 represents a prism of 1° over each eye, with its base towards the nose and a prism of 2° over each eye, with the base downwards, over right eye and upwards over left eye.

Fig. 7.



Figure 7 represents a prism of 2° over each eye, with the base downwards over the right eye, and upwards over the left eye, combined with a prism of 1° over each eye, with its base towards the temple.

Fig. 8.



Figure 8 represents a prism of 2° over each eye, base upwards over right eye, base downwards over left eye, combined with a prism of 1° over each eye with its base towards the nose.

Fig. 9.

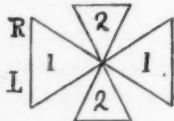
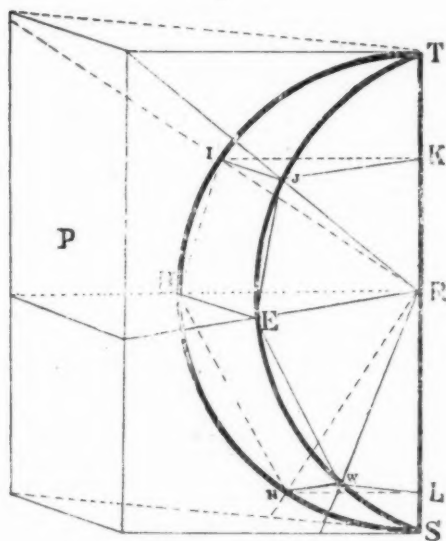


Figure 9 represents prism of 2° base upwards over right eye, base downwards over left, combined with a prism of 1° over each eye, with its base towards the temple.

The angle of a prism may be measured on a circle, by the arc intercepted between its two sides when the edge of the prism passes perpendicularly through the centre of the plane of rotation. A prism presents its greatest refracting angle to rays which pass in a plane perpendicular to its base, for rays which pass in a plane parallel to the base, the refracting angle is 0. Intermediate to these two directions there are numerous others in which the refracting angle is somewhere between 0 and the angle of the prism but the value is not proportional to the angular distance between these two principal directions.

Fig. 10.



These secondary angles can be measured on a portion of a sphere whose diameter coincides with the edge of the prism. The portion of a sphere included thus between the two sides of a prism, is called a spherical ungula. In the figure 10, the prism P coincides by its edge with the diameter T S of the sphere T H E S. The radius R T of the sphere equals the radii R H and R E respectively, which intercept the arc H E, equal to the angle of the prism. If the base of the prism H E is now rotated so that I J will correspond with the horizontal plane and N W with the vertical plane, the problem is to find the values of R I J and L N W; or if the values of R I J and L N W are given, as is usually the case, then we wish to know the value of P, and the angle of rotation, T I or H N. $T I + S N = H I + H N = 90^\circ$, since the vertical and horizontal diameters are 90° apart. From I we draw I K perpendicular

to T R, $IK = \sin \text{ang. rotation}$. From N we draw N L perpendicular to R S. N L equals $\cos \text{ang. of rotation}$. $IN = 90^\circ$, $TI + NS = 180 - 90 = 90^\circ$. $NS = 90 - TI$, complement of arc T I.

With I K as a radius we describe the arc of a small circle I J, its chord, is equal to the chord of the great circle whose radius is R I. The arc I J, of the small circle K I J is equal to the arc H E of the great circle R H E because they are both intercepted by the sides of the prism and their radii are perpendicular to the edge of the prism. The circles are therefore proportional to the radii of curvature and consequently:

Chord I J : chord H E, :: $\sin \text{ang. rot.} : 1$

Denoting the angle of rotation by r

Chord I J = chord H E ($\sin r$)

I J is also the chord of the arc R I J whose value we wish to find.

The chord is equal to twice the size of half the arc. Denoting the arc R I J by a , and the arc R H E by P , $2 \sin \frac{1}{2} a = 2 \sin \frac{1}{2} P (\sin r)$.

$\sin \frac{1}{2} a = \sin \frac{1}{2} P (\sin r)$. Formula 1.

In the same manner, representing R N W by b , we have

$2 \sin \frac{1}{2} b = 2 \sin \frac{1}{2} P (\cos r)$

$\sin \frac{1}{2} b = \sin \frac{1}{2} P (\cos r)$ Formula 2.

Dividing formula 1 by formula 2, we have

$$\frac{\sin \frac{1}{2} a}{\sin \frac{1}{2} b} = \frac{\sin \frac{1}{2} P (\sin r)}{\sin \frac{1}{2} P (\cos r)} = \frac{\sin r}{\cos r} = \tan r$$

Tang. $r = \frac{\sin \frac{1}{2} a}{\sin \frac{1}{2} b}$ Formula 3.

The values of a and b are usually given; we therefore obtain first the value of r ; the value of P may then be obtained from formulas 1 or 2.

$\sin \frac{1}{2} a = \sin \frac{1}{2} P (\sin r)$.

$\sin \frac{1}{2} P = \frac{\sin \frac{1}{2} a}{\sin r}$

Mr. Maddox in his book on prisms has a formula for obtaining the value of a single prism which combines the effect of two prisms, by rotating the base to a certain angle, and the formula for obtaining the angle of rotation. The refracting angle of the single prism is represented by R , the angle of rotation by r , the prismatic angle in the vertical meridian by V , and that of the horizontal meridian by H .

His formula, $\sin R = \sqrt{\sin^2 V + \sin^2 H}$, gives the degree of the prism necessary.

His second formula, $\sin r = \frac{\sin H}{\sin R}$ gives the angle of rotation. The results are the same as with the other formulas.

In rotary prisms the value of the prism (in the vertical meridian for example) when the base has been rotated 15° or any other angular distance from the vertical may be found by the following formula:

$\sin \frac{1}{2} \text{resultant prism} = (\sin \frac{1}{2} \text{prism} \cdot \cos \text{ang. rotation.})$

In the table which is appended the angles of rotation given, if less than 45° , refer to the distance the base is rotated from the position in which

the stronger prismatic effect is to be obtained. If greater than 45° , they refer to the position in which the weaker prismatic effect is to be produced.

TABLE GIVING THE DEGREE OF PRISM AND THE ANGLE OF ROTATION
TO PRODUCE THE EFFECT OF TWO PRISMS WITH THEIR
BASES AT RIGHT ANGLES.

Prisms required	Deg. of Ang. of Prism rotation		Prisms required	Deg. of Ang. of Prism rotation		Prisms required	Deg. of Ang. of Prism rotation		Prisms required	Deg. of Ang. of Prism rotation		Prisms required	Deg. of Ang. of Prism rotation	
	°	'		°	'		°	'		°	'		°	'
1x1	1.4	45	1x2	2.2	26.34	1x3	3.2	18.26	1x4	4.1	14.02	1x5	5.1	11.19
2x1	2.2	63.26	2x2	2.8	45	2x3	3.6	33.42	2x4	4.5	26.34	2x5	5.4	21.48
3x1	3.2	71.34	3x2	3.6	56.18	3x3	4.2	45	3x4	5	36.02	3x5	5.8	30.58
4x1	4.1	75.58	4x2	4.5	63.26	4x3	5	53.08	4x4	5.7	45	4x5	6.4	38.40
5x1	5.1	78.41	5x2	5.4	68.12	5x3	5.8	59.02	5x4	6.4	51.20	5x5	7	45
6x1	6.1	80.32	6x2	6.3	71.33	6x3	6.7	63.26	6x4	7.2	56.18	6x5	7.8	50.11
7x1	7.1	81.52	7x2	7.3	74.3	7x3	7.6	66.47	7x4	8	60.14	7x5	8.6	54.27
8x1	8	82.51	8x2	8.2	75.57	8x3	8.5	69.26	8x4	8.9	63.25	8x5	9.4	57.59
9x1	9	83.39	9x2	9.2	77.27	9x3	9.5	71.33	9x4	9.8	66.01	9x5	10.3	60.56
10x1	10	84.17	10x2	10.2	78.18	10x3	10.4	73.09	10x4	10.8	68.10	10x5	11.2	63.25
1x6	6.1	9.28	1x7	7.1	8.8	1x8	8	7.09	1x9	9	6.21	1x10	10	5.43
2x6	6.3	18.27	2x7	7.3	15.57	2x8	8.2	14.03	2x9	9.2	12.33	2x10	10.2	11.42
3x6	6.7	26.34	3x7	7.6	23.13	3x8	8.5	20.34	3x9	9.5	18.27	3x10	10.4	16.51
4x6	7.2	33.42	4x7	8	29.46	4x8	8.9	26.35	4x9	9.8	23.59	4x10	10.8	21.50
5x6	7.8	39.49	5x7	8.6	35.33	5x8	9.4	32.1	5x9	10.3	29.04	5x10	11.2	26.35
6x6	8.4	45	6x7	9.2	40.37	6x8	10	36.53	6x9	10.8	33.42	6x10	11.7	30.59
7x6	9.2	49.23	7x7	9.9	45	7x8	10.6	41.11	7x9	11.4	37.44	7x10	12.3	35.01
8x6	10	53.7	8x7	10.6	48.49	8x8	11.3	45	8x9	12.1	41.39	8x10	12.8	38.40
9x6	10.8	56.18	9x7	11.4	52.6	9x8	12.1	40.21	9x9	12.8	45	9x10	13.5	42
10x6	11.7	59.1	10x7	12.3	54.59	10x8	12.8	51.20	10x9	13.5	48	10x10	14.1	45

CASE OF CONGENITAL, BILATERAL EXTERNAL OPTHALMO-PLÉGIA AND CONGENITAL BILATERAL FACIAL PARALYSIS.

BY DR. B. E. FRYER.

KANSAS CITY, MO.

This case is one which has interested me very much and I can only regret, that on the two occasions in which I had the opportunity of seeing it, that the time did not allow my obtaining all the points in regard to it that I wished.

The patient, H. B. a young man 16 years of age, was sent me by Dr. Simmons, of Lawrence, Kansas. The following points in reference to the eyes were noted.

There is well marked epicanthus. The eyes are directed straight forwards—their axes parallel. There is inability to move either eye outwards, and this is so both as a conjugate movement when its fellow should be rotated inwards, and also this inability to move either eye outward its fellow being covered. Vertical movements of the eyeballs are possible, but do not seem to be complete. Movements of either eyeball inwards in convergence on objects brought near the face are incompletely possible with both eyes open; but turning either eye inwards is completely impossible with its fellow covered. Conjugate lateral movements therefore are impossible—the patient turning the head always and not the eyes when endeavoring to obtain a view of objects passed before him. While reading the patient moves his head or his book laterally so as to keep the type as nearly in the median line as possible. The eyeballs present externally no abnormal appearance—they do not protrude nor are they recedent as to the orbit. The pupils are normal in every regard.

The patient is highly myopic—the optic discs are apparently smaller than normal but there is no choroidal absorption as is so frequently found in high degrees of myopia—which in this case is 10. D.

Vision without glasses=R $\frac{20}{200}$. L. counts fingers at 12 feet.

The points observed in regard to the facial paralysis were as follows:

Patient can only partially close the eyelids. None of the muscles in use giving facial expression seem to have power if they exist. Or rather there is no change of facies from time to time. Laughing is had more from vocal sound than any drawing of the mouth. Words are thick from inability to properly emit them through the lips. Labial sounds are imperfect—unpleasant—the gutturals taking their place largely. The cheeks are hollowed—the buccinator muscles are paralyzed if they exist—and this would seem to confirm the idea that the buccal muscle is enervated by the facial and that the branch to this muscle from the fifth pair is sensory and does not contain motor filaments, the latter being furnished by the facial. There is difficulty while talking in pre-

venting saliva from flowing from the mouth.

Mr. B. is physically defective also in that his right hand is wanting and the whole right upper limb is of less length and girth than its fellow.

The tendon reflexes are normal.

The patient is very bright and intelligent as shown by his replies and from the fact that he is first in his class in the High School at Lawrence.

The conditions above stated have existed I am informed by the father from birth.

The points of interest in the case are the external ophthalmoplegia and the partial facial paralysis. The various muscles if they exist are inert. The nerves supplying these muscles with motor influence are the 6th and 7th pairs. As the paralytic symptoms have existed from birth it is a fair inference I believe that the cause is to be found in the absence of the 6th nucleus on each side and also in the more or less incompleteness of the 7th nucleus.

When we refer to the location of these nuclei we shall see their juxtaposition in the pons.

It will be remembered when describing the symptoms it was stated that no conjugate eye movements laterally (which required the use of the ext. recti muscles,) were possible when the effort was made with its fellow closed or open; but that convergence is possible when an object is brought near the eyes—the object being held near the median line. The eyes return to an axis nearly if not quite parallel when the object is removed.

Now Daval, Labord Graux and Landouzy have asserted that the 6th nucleus is the reflex center "presiding over that complex of automatism by which the eyeballs, head and neck move harmoniously in concert." As to whether this is correct as a whole I will not now discuss, but there is good ground for believing that in so far as conjugate movements of the eyeballs are concerned this would seem true, viz: that in the 6th nucleus resides a control which may be, first, either purely reflex or automatic, or secondly, it may also be the centre through which the voluntary impulse, the stimulus originating in the cortical centers is transmitted resulting in the one of automatic and by the other voluntary conjugate lateral eye movements.

In support of this I would mention the case of Dr. A. Hughes Bennett and Thos. Savill reported in the July 1889 number of *Brain*. In that case there was diagnosed a lesion confined to the left 6th nucleus and this was confirmed post mortem. The symptoms were permanent conjugate deviation of the eyes and head to the right with impossibility of conjugate eye movements laterally—but with perfect lateral movements of the right eye, the left being closed. Convergent movements were possible with both eyes open.

A NEW TEST FOR THE OCULAR MUSCLES.

BY DR. S. J. BUMSTEAD,

OF DECATUR, ILL.

The Geneva Optical Company, has lately introduced to the profession a cheap and very simple contrivance, the invention of Mr. Ridgeway, for the purpose of testing the state of equilibrium of the ocular muscles. No doubt most of the oculists in the United States are already acquainted with this simple instrument, but the belief that all have not had their attention called to its peculiar excellence, must be my excuse for calling attention to it in this manner. The instrument consists of a half cylinder of glass about $\frac{1}{2}$ of an inch in length, which is fastened on a hard rubber disk that is rimmed to fit the trial frame. The disk has a slit 4 mm wide, over which the segment of the cylinder is fastened. This constitutes a prism, or rather an innumerable series of prisms, which instead of throwing one image upon the retina of the eye before which it is placed, throws so many of them, that lapping as they do, they form a continuous band of light, when a candle or a point of light is used as the object.

If a candle is placed at 20 feet, or a small aperture in a black card before the window, and this instrument is held horizontally before one eye of the patient, a band of light will be thrown vertically upon the retina, and will be projected outward to such an extent as to reach almost from the floor to the ceiling. If it is held before the right eye, and the band of light is to the right of the candle, esophoria exists for that distance, and in amount equal to the degree of the prism base out, that is found necessary to make the band of light pass vertically through the candle flame. If it is to the left of the candle, of course exophoria is present, the extent to be determined as before, but with prism base in. When testing for possible hyperphoria, the half cylinder must stand vertically before the eye, when the streak of light will run horizontally across the room, through the middle of the flame if there is equilibrium of these muscles. In this case also, prisms held before the eye base up or down, will measure the vertical aberration when it exists. For the near test with this instrument, I use a black line between 2 and 3 mm in thickness and nearly 5 centimeters long, upon a white card. This is held vertically and opposite the meridian line between the two eyes, at the ordinary reading distance, and if there is equilibrium for this distance the line is simply extended to the upper and lower borders of the card; if the muscles are not balanced, a second line will be seen either to the right or left of the real one.

Prisms, base in or out, will also give the degree of aberration at this point.

The fact has frequently been deplored that we had no better test than the old one of a prism of 8 or 10° base up or down, before one eye, for it has already been suspected that this has the effect of so thoroughly deranging the muscular balance as to vitiate the result, and often to induce a lateral deviation that is but momentary. This suspicion became very much strengthened in my mind, when I noticed the impressive manner with which Dr. Stevens dwelt upon the mischief to the lateral muscles, that the least degree of hyperphoria produced. He also earnestly expressed the hope, that a new method might be found that would be free from the disturbance of the old one. It seems strange to me for these reasons, that Dr. Stevens has not suspected that some of his cases were manufactured by the artificial hyperphoria thus produced.

I believe that the ideal test free from these disturbing influences for which Dr. Stevens longed, has been found!

It occurred to me from theoretical considerations, that there should be a difference, much in favor of the continuous line of images thrown upon the retina, over the single one that all prism tests introduced. With the single image impinging upon one spot of the retina, the eyes will seek to overcome the annoyance of the vertical diplopia, and will thus frequently bring into existence decided lateral deviations that are purely artificial. But with the continuous band of light, or succession of images of the candle flame, the eye gives up the case as hopeless, there are too many of them, the struggle seems to be given up in a moment, and followed by the normal position of rest of the ocular muscles, bringing to light their true relations. I have already tested a number of cases with this instrument, and at present I am strongly inclined to believe the above explanation to be the correct one. I have often found that the old test, prism 10° base down, would show a high degree of esophoria or exophoria at one-half meter and at 20 feet, when the Ridgeway test would show a normal equilibrium of the muscles. I have found no case where the method of Schiotz for instance, revealed less than the Ridgeway test, but it too often shows a higher degree than the new instrument brings to light, and sometimes a considerable degree, when the Ridgeway test demonstrates equilibrium.

I believe therefore, that I am justified in expressing the fear that when the old tests are depended upon, many persons have prisms prescribed for them who really do not need them, and I am skeptical as to the value of prisms, when there is no strong tendency to deviation. There is still another use for this little instrument in which, it seems to me, it is likely to excel all others. I refer to the recognition of diplopia in cases of strabismus, or in eyes unused to binocular

vision. My experience in these cases has been limited, but in all I have examined since I have had this instrument, the recognition of the streak of light has been prompt and decided. In one case, that of a young man of 20, the right eye had had convergent strabismus in early life, and had been operated upon many years before. I could see that some degree of convergence still remained. This eye was amblyopic and had hyperopic astigmatism needing the following: $+16 \text{ C} + 16 \text{ c } 90^\circ$. Without this glass this eye had vision $= \frac{20}{200}$, after correction $\frac{20}{20}$. He had never had binocular vision or diplopia, had never been able to get any result from use of the stereoscope, yet the Ridgeway test promptly gave the result expected and proved his remaining convergence to be 12° .

In another case, where the the complaint was of asthenopic symptoms on close work in a young man, it was evident at a glance that the left eye stood higher than its fellow. Only at rare intervals had he momentarily seen objects double, visual acuity the same in both eyes. Upon covering one eye no movements of fixation could be detected. Upon producing lateral diplopia by placing a strong prism base in before the right eye, (normal eye) no difference in the height of the double images was recognized. But the moment the Ridgeway test was employed holding it vertically before the left eye, the band of light was seen at the base of the candle flame, proving that this eye stood above its fellow, and yet in degree it only equalled that of a prism between $1\frac{1}{2}$ and 2° . In another case I found esophoria of 2° at 20 feet by this test, and equilibrium at 15 inches. As this patient overcame a prism of 9° base inward, and one of 38° outward, I did not believe the ocular muscles were out of equilibrium, and omitted prisms in my prescription.

I can therefore warmly commend this instrument to the profession as a valuable addition to our armamentarium in all that concerns the ocular muscles. It will at least prove valuable as a method of control, and I should hesitate to prescribe prisms in a case where this test proclaimed the muscular balance to be normal.

This test is said to involve the same principle as the Maddox rod test, but as I am not familiar with the latter I cannot speak positively upon this point. However, as we are not concerned so much about who first discovered the test, as we are about its reliability and its adaptation to our purpose, we can easily allow all such questions as priority of discovery, to be settled hereafter.

AN IMPROVED METHOD OF ATTACHING BULLER'S SHIELD.

By E. M. MARBOURG, M. D.,

PUEBLO, COLO. OCULIST AND AURIST TO COLORADO MUTE AND BLIND SCHOOL, ETC.

THE difficulty of securing constant adhesion of the plaster of a Buller's Shield, especially upon the nasal side, is a constant menace to the integrity of the sound eye.

W. T. Holmes Spicer, of the Royal London Ophthalmic Hospital, in his analysis of one hundred and fifty-eight cases of Acute Purulent Ophthalmia* says :

"It must not be taken for granted that because the shield is there, the occluded eye is safe. Cases (1, 16, 28, 100, 117, 126,) in which the second eye became inflicted, although the shield was worn, show that the shield was not an absolute protection.

No doubt the inoculation was due, in every case to inefficient application, or to a loosening of the attachment of the shield, but if it cannot be kept properly applied at an ophthalmic hospital, it will, probably be less efficiently done elsewhere.

It is difficult to secure constant adhesion of the plaster, which gets moistened by the applications to the other eye, and its inner border detached.

Attention should be constantly directed to this, the weakest point in the armour of defense."

That moisture is the enemy of all adhesive plasters, is a fact that every surgeon has thrust upon him as a daily occurrence, especially in Purulent Ophthalmia, where frequent applications of cleansing lotions must be made to the infected eye, their action at the same time loosening the shield.

The microscopic gonococcus finds its way beneath the loosened edge of the plaster of the shield and the eye that we have been laboring day after day to save from infection has become inoculated.

The shield, now no longer of use, is cast aside.

It occurred to me, while making a Buller's shield for a patient, that the edges of the shield could be more securely attached to the skin, by means of, in addition to the rubber plaster, a combination of absorbent cotton and collodion.

The shield is attached by means of the plaster in the usual manner, then along the edges extending about a half an inch upon the plaster and the same upon the skin, a thin layer of absorbent cotton is placed. This must be especially attended to upon the nasal side of the shield, the cotton extending well down toward the infected eye.

The lower edge of the shield can be left open for ventilation, as sug-

*R. L. O. H. Rep., Vol. xiii, page 218.

gested by Dr. Buller. The cotton is now thoroughly moistened with collodion, and the edges smoothed down, so that the adhesion to the skin and plaster be complete.

After the colodion has dried another coat should be applied with a camel's hair brush. Upon drying, the cotton and collodion assume an appearance similar to that of the layers of a silk worm cocoon. It is tough, pliable, readily adapting itself to all positions, and above all, it resists water. Only energetic rubbing will cause the edges to fray, and this can readily be corrected by brushing a fresh layer of collodion over the cotton. This combination, (collodion and cotton,) unlike collodion alone upon some tender skins, does not produce any irritation.

With this method of applying Buller's Shield, I have had no difficulty in securing the sound eye from infection, as in no case where it was applied did the shield become loosened, by moist applications or otherwise.

THE PRELIMINARY AND AFTER-TREATMENT IN CATARACT OPERATIONS.

By L. WEBSTER FOX, M. D.,

PHILADELPHIA.

Cataract operations are usually successful. In olden times, and I may say that up to a very recent date, the general surgeon performed such operations; but the statistics of that day show that the percentage of successes were much lower than they are to-day. There are several reasons for this. I can't say, however, that we are better observers, nor have we improved upon our selection of cases; for any one conversant with the writings of Sichel, Desmarres, Ware, Lawrence, Mackenzie and others, must admit that these surgeons were exceptionally keen in noting dyscrasias in their patients. There is no doubt that we have improved upon our hygienic surroundings. That we give more attention to the preliminary and after-treatment, goes without saying, and again the young student who aspires to the dignity of a thorough ophthalmic surgeon, seeks training in the most advanced schools of medicine and of talented instructors; keeping his hands constantly trained by operating upon hundreds of pig's eyes, thereby developing courage and dexterity. Is it to be wondered at that our results of to-day are better than those of fifty years ago? Every careful surgeon keeps his hand in training by following up the precepts above, and if he does not, let him try operating on pig's eyes and watch the development of the *cunning* of his hand. Having trained one's hand, the next thing to do is to make a general survey of his patient, inquire into his habits, occupation and ancestral traits. I mean by this, wheth-

er there existed gout, rheumatism or syphilis; then follow by a careful examination of the urine as to quantity and quality. If pathological changes are found, correct them before performing an operation, for one unsuccessful operation injures a beginner more than ten good results do him good—patients always expect to be given sight. A strict diet should be furnished, meats lessened and vegetables increased, tea and coffee forbidden, natural waters drunk, especially those rich in arsenic and lithia. One week previous to the operation, the eye should be bathed twice daily with hot water and followed with lotion boracis and the night before the operation an ointment of hydrargyrum applied over the brow of the eye selected.

The blood must be defibrinated and made strongly alkaline which is best brought about by the internal remedies of hydrarg. bichloridi and potass. iodide pushed just beyond their tonic effect.

These preliminary preparations seem many but we must not forget that we have an eye at stake and "an ounce of prevention is worth the pound of cure."

Just before the operation the eye ball should be thoroughly cleansed by the aid of the hydrostatic eye douche; (Fig. 1,) which I have

Fig. 1.



found to answer the purpose exceedingly well. The details of an operation must be carried out neatly and quickly, the surgeon should also be ambidextrous. The knife must be grasped lightly yet firmly. Any method of operation may be selected. Let the puncture and counter-puncture be made, but when the knife is withdrawn let it be done with one sweep, so that the blade will pass through the tissues without causing a jagged edge, which is almost inevitably connected with any sawing movement. Whether we perform an iridectomy or not depends upon the operator: The ideal operation in our bright climate is the one without an iridectomy, but it is difficult to perform. The danger in this operation lies in the prolapse of the iris after the lens is delivered. Any remaining cortical debris can be washed out of the anterior

*I always give the Virginia Arsenic Bromide and Lithia water, (Crockett Warm Springs,) Shawsville, Va.

chamber with safety, by placing the point of a bulbar shaped syringe against the lips of the wound, and gently forcing an aseptic stream into the chamber. If the iris becomes lodged in the wound it may be replaced by a small Daviel's spoon. A drop or two of atropia solution (gr. iv to 3j) is then applied to the eye, eserine, in the simple extraction or without the iridectomy. The preparation of eye dressing always takes considerable time and their adjustment is not always satisfactory.

I have recently devised two kinds of eye-pads, which have given me the greatest satisfaction. They fit comfortably and evenly to the face, being held in place either by adhesive strips or a knitted bandage, and in applying them much time is saved and an exceptionally smooth bandage obtained.

Fig. 2.

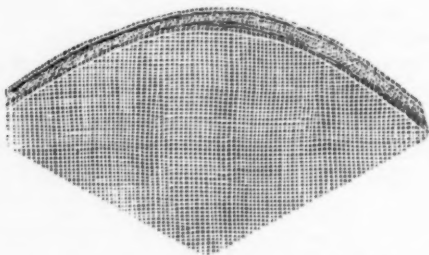
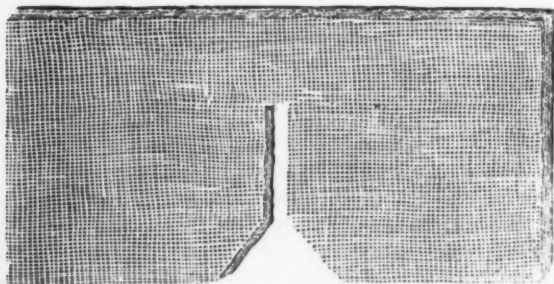


Fig. 2 fits closely over the eye ball and consists, first of a lining of antiseptic gauze, then a layer of cotton, next a linen sheet and lastly the white gauze for the external covering.

The texture used in the larger pads, 3, is of two kinds, one with white and the other with black linen sheeting. The size of these pads is six and a half by three and half inches, all being hydronaptholated.

Fig. 3.



The eye is allowed to rest for twenty-four hours when the pads are

replaced by fresh ones. I have observed in many cases that on the third day a slight conjunctivitis may develop, when it does, it is better to dispense with bandages for at least two hours daily, merely protecting the eyes from excessive light by smoked glasses. In not a few cases we are obliged to protect the eye from the patient himself by a thin wire netting—the one after the Vienna model is the best. It is not necessary to use this protector on intelligent individuals, but among the ignorant, especially hospital patients who will insist on meddling with their vision. As regards the amount of light to be admitted into the room, one should always be governed by the surroundings. I do not believe in dark rooms, the light must be so modified that any one entering a room, should be able to find his way about without danger. After five days all bandages may be dispensed with, and in some cases even as early as the third day.

The after treatment of cataract cases is not complete until glasses are prescribed. Authorities differ as to the time when such glasses may be given to be worn constantly. Here again each case is a law unto itself. As a rule distant glasses are given at the end of four weeks, those for reading or near work two weeks later. Certain individuals will not bear a full correction at first; they become dizzy and fail to measure distances, for such patients, half the strength of their full distant correction will give satisfactory results; the full correction to be given later. In my next paper I shall speak more fully on this topic and also of recurrent capsular cataract and its operative treatment.

ON THE VALUE OF ACCURATE TESTS OF HEARING, IN THE DIAGNOSIS OF CERTAIN EAR AFFECTIONS.

BY OREN D. POMEROY, M. D.,

SURGEON MANHATTAN EYE AND EAR HOSPITAL; PROF. OTOTOLOGY N. Y. POLYCLINIC, ETC.

In chronic middle ear catarrh the diagnosis of obstructed Eustachian tube is not always readily made. Inflation may be often easily accomplished, nay, the tubes may be in such a state as to admit of passage of air into the drum cavities more readily than when in a normal condition, and yet the patient may be suffering from the failure of the Eustachian tubes to supply an adequate amount of air to the drum cavities. This point is determined by testing the hearing, and contrasting it with that found after inflating the drum cavities; naturally the proper amount of air only, must be injected into the cavities, and if any excess is thrown in, it should be removed by methods known to all aural surgeons. If the hearing is improved it is fair to infer that there was insufficient air supply to the tympanum due to impaired functions of the Eustachian tubes. A few exceptions exist to this proposition; hearing may be augmented by inflation in some cases where the tube is doing its part well—the membrane may be sunken, the stirrup may be impacted in the oval window, the tendon of the tensor may be shortened and draw the membrane inward, or there may be intra-tympanic adhesions drawing the membrane towards the promontory; the hearing may be much improved temporarily by forcing air into the tympanum with some violence, thus causing a sunken drum head to approach nearer to the normal position. If now the patient makes any movement which opens the Eustachian tube, the air escapes from the cavity, and the previous hardness of hearing returns. Inspection of the drum membrane even by the most expert observer cannot determine certainly whether the drum cavity is properly supplied with air. I know what a rash statement this seems to be, but I can confidently call on any Otologist of experience to confirm this assertion. If a given drum membrane were previously absolutely normal, and it should suddenly become sunken from tubal obstruction, the appearance of the light spot, the short process, the malleus handle, etc., would undoubtedly indicate the fact, but this condition is seldom found; the signs of sunken membrane being almost always of such a nature as to make it impossible to determine whether they pointed to a present or past condition. I maintain, from many observations, that if a drum membrane has once been sunken for a considerable period, that the *appearances* of faulty position *may* always remain.

Again, I have made the statement at the N. Y. Laryngological Society that it could not be determined with any certainty as to whether the drum cavity was properly ventilated, by inspection alone of the faucial orifice of the Eustachian tube. One year afterward a distinguished member of the same society publicly stated that since my statement he had frequently inspected the orifice of the Eustachian tube and had found ear trouble where the tube looked normal and no ear symptoms where there was apparently considerable trouble with the Eustachian tube. Another symptom of ear disease not clearly indicative of an exact condition, is a stuffed feeling in the ear or a feeling of something veiling or covering the ear. Impacted cerumen or anything that acts obstructively in the outer meatus, as aspergillus exzematous exfoliations, etc., it is true, may occasion this symptom, but it is more likely to arise from hyperæmia of the drum cavity or sunken drum membrane. If dependent on the latter the hearing will be noticeably improved by inflation. If depending on the former the hearing will be unaffected by inflation and it will be found that leeching or cupping or hot applications or other means for diminishing the hyperæmia of the drum cavity, will at once improve the hearing. In the deafness from overdoses of quinine and other remedies having a similar action, the exact condition of the organ may be determined by tests for the hearing. Sometimes there is only hyperæmia about the orifice of the Eustachian tube which may be proven by the hearing test before and after inflation—that is, providing the hearing be improved by the inflation; if the trouble is hyperæmia of the drum cavity the improved hearing after the subsidence of the congestion would sufficiently indicate this fact. In some cases there is reason to believe that the labyrinth is involved.

The hearing *then* might be moderately lowered, with weakened bone conduction, or in rare cases there might be nearly complete loss of hearing for both aerial and bone conduction. I have however never met with the latter condition.

In aural vertigo, the pathogenetic factor is often arrived at by the hearing tests. The simplest condition is that of pressure on the labyrinthine mechanism from sunken drum membrane. It will follow from what has already been said, that the test for the hearing before and after inflation would determine this causation of vertigo.

The improved hearing from the removal of any obstruction in the meatus or drum cavity would remove a possible cause of vertigo and act as a diagnostic. The same observation would obtain in hyperæmia of the drum cavity.

In tinnitus aurium we very soon obtain a hint as to a possible causation by the hearing test; if it depends on sunken drum membrane the inflation that improves the hearing relieves the tinnitus. The tinnitus

dependent on hyperæmia of the tympanum may also be determined by the hearing test as before stated.

In this place I would say a word as to what constitutes *normal hearing*. I know of no absolute test for normal hearing. In my book on *The Diagnosis and Treatment of Diseases of the Ear*, I have referred to the case of a physician who complained of defective hearing and a stuffed feeling in his ears. On examination I found that an ordinary 48 inch watch could be heard at 25 inches. I then inflated his drum cavities and the hearing rose to 35 inches. There was no redness of the drum membranes, but some hyperæmia about the pharyngeal openings of the Eustachian tubes indicated the nature of the trouble.

From this and other experiences I am led to believe that all the hearing to be got out of a given case is not more than normal. This observation is especially valuable when testing the two ears of a patient; if one ear has less hearing than its fellow it is below the normal. It is particularly valuable in patients who have been informed that there was nothing the matter with their ears; the drum membranes show so few signs of disease that the most expert examiner might be pardoned for overlooking evidences of disease; the throat and Eustachian tubes may reveal no disease, yet the patient has some abnormal sensation about the ears; when careful examination of the hearing is made the watch may be heard perhaps 20 inches with one ear, but with the other only 15 inches. On inflation, even both ears may be improved, proving conclusively that disease of the ears existed. This would be especially true if the ear symptoms disappeared after the treatment. It is curious to note that in two cases like the following, the same results obtained: The first could hear the watch 15 inches before inflation and 18 inches afterwards. The disturbing symptom was a stuffed feeling in the ear with some tinnitus. These were promptly relieved by the treatment. The other case had almost the identical symptoms, which were relieved by inflation, although the hearing was only 3 inches for the watch before inflation and 4 inches afterwards. In each case the trouble depended wholly upon pressure from a sunken drum membrane. *In impacted cerumen* the tests for hearing give us a diagnostic hint. Naturally we expect in a majority of such cases some lowering of hearing from the chronic aural catarrh which so often exists in such cases, but not always.

After the removal of the cerumen the hearing may not be at its best, when inflation may improve or perfect it. This depends on sunken drum membrane, caused by pressure of the cerumen on the drum head, or upon the forcible impact of the water used in syringing, or it may be due to catarrh of the Eustachian tube. In the former case inflation would restore the hearing permanently, while in tubal catarrh the hearing would probably be again lowered after a few hours or

days. If the patient has pure middle ear disease, *hearing better in a noise* is likely to be a noticeable symptom. This proposition needs to be made with some explanations, however. I do not remember to have seen a patient who could hear the ticking of a watch, or Politzer's Acoumeter better in a noise. I believe however that some sounds are heard better in a noisy place, especially the human voice. A person riding on a railway train can make this observation; one ear being normal and the other moderately affected by middle ear disease; in this condition most of the sounds of the train may be heard much better by the affected ear than by its fellow. I have noticed that the lower tones could be particularly well heard by the affected ear.

In comparison with the normal ear, I think almost always, it will be found that the diseased ear, if not too much affected will hear better in a noise than the normal ear.

It would appear that one explanation of this is—that the loud sounds overpower and in that way interfere with the hearing; also the *attention* is distracted by the sounds heard with too painful distinctness.

A painted picture on a window screen will obstruct the vision of objects within the house, when if the surface of the screen had nothing to attract the attention, vision of objects within the house would be greatly improved. This comparison will serve to illustrate the point. I do not however regard the hearing better in a noise as a good differential diagnosis of middle ear disease, the tuning fork being far better. When the patient hears *certain sounds better than others* it is generally regarded as an evidence of labyrinthine disease. This is sometimes true but frequently not. Every Otologist has repeatedly observed that a patient with moderate middle ear disease may hear a watch badly and the voice well, or, *vice versa*. It is also well known that in pure middle ear catarrh the capacity to hear musical sounds may continue after great impairment of the hearing for other sounds, notably the ticking of a watch or conversation. Sometime since I visited the Deaf and Dumb Asylum on Lexington Avenue, where I found a young man totally deaf to nearly all forms of articulate speech. Certain words however he could distinctly hear at a few inches from the ear. In conversing with him the oral method served for all conversation except those words before mentioned which were spoken to the ear alone. The bone conduction was not noted but was undoubtedly, for the most part absent. He had in early childhood suppurative otitis from scarlet fever. There seems no doubt but that this was a case of true labyrinthine disease. In those cases just referred to, difficulties arise in differentiating between functional and organic disease of the internal ear, which it is to be feared will always exist. There is another condition in which testing of the hearing aids in diagnosis. A patient who is hard of hearing may lower it by long continued strain-

ing of the organ, to hear sounds nearly inaudible. I once ordered a North Earphone for a medical man who was very anxious to hear lectures. In the morning of his attempt to attend lectures, he heard very well; by four or five o'clock he had become so hard of hearing as to make it impossible to hear lectures at all. He eventually heard again as well as usual, but I naturally advised against such excessive use of the ears. I infer that a part at least of the condition known as Boiler Maker's deafness depends on fatiguing of the nerve of hearing by the constant concussions the ear is subjected to. It is well enough known that in these cases the hearing may be partially or wholly restored if the patient removes himself early enough from the source of his trouble. I infer that at first, there is only hyperemia of the labyrinth and no structural lesions as undoubtedly exist later on.

Sometimes a hint as to the comparative condition of the two ears may be gained by the use of the tuning fork. In estimating the amount of disease in each ear of a patient, I have sometimes been at fault; the patient insisting that one ear was more servicable than the other, when by the watch and other tests there seemed to be no difference in the hearing power of each.

By placing the tuning fork on the teeth, the patient may hear it better in the ear he declares to be the worse; the inference at once would be that there was more *middle ear* disease in the one with the better bone conduction than in the other. Labyrinthine disease in such cases would ordinarily be thrown out by the fact of comparatively good hearing in the case under consideration. Further examination of the ears as to their capacity to hear many varieties of sounds would show that the ear claimed by the patient to be the better really was so.

There is a class of patients with chronic middle ear disease who seriously declare that certain sounds are heard with painful acuteness.

No doubt the sound is painful to them, but with hearing considerably lowered it could not be of the nature of acute hearing; a nerve of sensation and not of audition had evidently been excited by the sonorous impression. Similar phenomena have been obtained in the earlier stages of acute otitis media and may be explained in a similar manner.

Many persons with chronic middle ear disease complain that if words are spoken slowly, that there is little trouble in hearing them but the moment the articulation is rapid or the words become *mixed* there is great difficulty in hearing.

This is undoubtedly due to the scrutinizing changes in the middle ear, which results in lessening the inability of the middle ear

mechanism, so that muscular action is no longer able to make swift and fine adjustments of the membrane for the rapid reception of great varieties of sound coming in swift succession. The treatment directed towards mobilization of the middle ear mechanism is evidently intended to correct this condition.

Diplacsis or double hearing, whether monaural or binaural, seems to depend on Labyrinthine disturbance brought about mainly by pressure from sunken drum head, or hyperæmia of the middle ear and labyrinth, or possibly from intra-labyrinthine exudations. The latter observation, however, is speculative.

From the foregoing observations, the conclusion may be reached that many diagnostic points may be determined by the functional examination of the ear.

316 LEXINGTON AVE.

PROGRESS OF OTOTOLOGY.

BY LAURENCE TURNBULL, M. D., PH. G.

AURAL SURGEON TO THE JEFFERSON MEDICAL COLLEGE HOSPITAL, PHILADELPHIA.

ANATOMICAL AND HISTOLOGICAL.

The progress which during recent years has been attendant upon anatomical and histological research in the field of otology, has been most marked and successful. Ever since the careful and conscientious labors of "Toynbee" of England, a knowledge of the microscopical appearances of the normal ear, and a thorough study of the pathological anatomy of the organ, was found by him to be absolutely necessary for a successful treatment of obscure diseases of the ear.

But it is chiefly by the labors of "Politzer" of Vienna, that real progress has been made, his devotion for the last twenty-five years has resulted in the most important advantages in the study of the normal and pathological anatomy and histology of the ear, and his methods and dissections should be studied and practiced by all students and medical men who desire to be posted on this department.¹

As an example of what recent investigation has achieved, it is only necessary to allude to the important progress made in the histological representation of the human labyrinth on the basis of the latest of microscopical investigation,² results which undoubtedly are but the fore-showing of still greater advances in the pathological-anatomy and examination of the ear.

PROGRESS OF OTOTOLOGY.

A few of the advances in the Department of Aural Surgery and therapeutics are worthy of publication.

The first matter of importance is the *severance* of the connection or relation of the diseases of the eye and ear. This is an advance as there is but very feeble relations between these two departments.

The second is the *union* between the departments of the ear and throat. There is a most important relation and connection between the diseases of the ear, nose and throat, and we with others, have, of late recognized this very important relationship, and have advocated at later meetings of the American Medical Association, their combination. The fruits of this union has been shown by their conjoint publications. Many of the diseases of the middle ear are the result of nasal or naso-pharyngeal diseases, which is either direct (mechanical) caused by tubal interference, or are produced by reflected irritation

¹Anatomical and Histological Dissection of the Human Ear: Translated by Dr. George Stone, London, 1891, p. 272.

²See Part VIII, p. 244.

of the mucous membrane. Lesions of the dental organs also frequently cause reflex aural troubles.

The following are a few of the diseases of the naso-pharynx which produce reflex, i. e., mechanically, middle ear disease and deafness: Hypertrophic rhinitis, hypertrophy of the tissue covering the turbinate bones impinging upon the Eustachian tubes and their faucial orifices, and at times involving their lumen, deflected cartilage or bony septum, high up in the nose, with exostosis, growths in the nose or naso-pharynx, and various diseases of the nose and throat of a specific and non-specific character. There are also numerous reflex causes of deafness from disease of the nervous apparatus, more especially those connected with the sympathetic and trifacial. To treat middle ear disease and deafness therefore with success, all naso-pharyngeal disease must be removed, i. e., conjointly treated.

In middle ear disease it is of primary importance to treat any nasal catarrh, to remove pent up secretions, and to put the parts into an antiseptic condition; then follow up the treatment with zealous energy. Some means must be employed that will accomplish this and do no harm to the nasal parts. The nasal douche often does harm, is dangerous and ought not to be used. Treatment can be best made by a spray through the nostrils of peroxide of hydrogen, (fifteen per cent.) diluted with a teaspoonful to three teaspoonsful of pure water; also the use of the salts of sodium, menthol, zinc, with tonics of strychnine iron and mercury. When peroxide meets the purulent secretion, an effervescence takes place, and the sticky, pasty, foetid mucous is changed into foam. Its septic nature is entirely changed, and it can be readily blown or wiped away from the nostrils. This should always be done before the Politzer douche or Valsalva inflation is used, therefore preventing the danger of blowing foul fluids into the tympanum.

Most thorough antiseptic means should be used to cleanse the parts, as also all instruments, which should be dipped into boiling water, or into alcohol and this ignited, before all such surgical operations. All instruments should be sterilized by dry steam or heat if they can not be burned out.

In very severe and protracted cases of deafness due to plastic disease, with noises in the head and ears, with or without vertigo, various surgical operations are now employed; as perforating the membrana tympani, removal of the same by acids and escharotics, or the entire removal of the membrane and the ossicles or one or two bones of the middle ear. These operations are not to be done until all other measures have failed, and the patient becomes gradually worse, or when the "beating" in the head and ears become unbearable.

THE GALVANO-CAUTERY METHOD IN THE NOSE AND THROAT.

Is the galvano-cautery a dangerous agent? It is if not employed

with caution and with great care. Its incautious use in the *nose* may be followed by inflammation there, and in the various contiguous organs, even erysipelas of the head and face. We have seen a number of unfortunate results, several cases of purulent otitis media. We mention as a safe-guard before intra-nasal operations, first, the use of a twenty per cent. solution of cocaine; the second, the injection of warm alkaline solutions, and coating the burnt surface with pure vaseline, and cotton wool to protect the charred surface. The heat to be employed is a red heat and this often answers for all that is required; a white heat is seldom needed.

The following accidents have occurred in the use of the galvano-cautery even when employed by competent and able advocates of the cautery electrode. In destroying a growth upon the turbinated bones with the cautery, it accidentally burned the opposite part of the septum nasi, which nearly resulted in permanent agglutination of the nasal passage.

Also accidentally burning the rim of the Eustachian orifices with the cautery electrode, while removing a growth from the vault of the pharynx, causing otitis media of a serious character, and in another case, purulent otitis was caused in the opposite ear from the nostril in which the operation was performed, and was attended with symptoms of so serious a character as to threaten the life of the patient. In another instance, a slight cauterization of hypertrophied mucous membrane upon a turbinated bone, caused facial erysipelas that nearly proved fatal. A strong young man on whom galvano-cautery had been used, had within two hours violent earache and headache, and in a few days perforation of the tympanic membrane and discharge from the ear.

Applications of the galvano-cautery should never be employed in ear diseases to the posterior surface of the pharynx, only in the nasal space and anterior surfaces.

In all removals of hypertrophic enlargements, advanced growths in the posterior surface, or in the vicinity of the Eustachian tubes should be performed by cutting forceps, or the finger charged with the ring cutter, or even the long finger nail. We cannot recommend the use of chromic or the more recently introduced trichloroacetic acid in this region.

VALUE OF THE OPERATIONS UPON THE DRUM-HEADS AND OSSICLES.

This was discussed by Dr. Sexton of New York,¹ also in a paper read by Dr. Burnett of Philadelphia. We will dwell upon the remarks of Dr. Sexton which we regret were not published. He gave a history of

¹Addresses, Papers, and Discussions in the Section of Otology and Laryngology in the Proceedings of the Forty-second Annual Meeting of the American Medical Association, Washington, D. C., May, 1891.

the operation giving credit to Lucae, but stating that the Germans were not in favor of his operation, which he remarked was somewhat different both in its execution and results. In his earlier papers he advised the removal of two of the ossicles, but in his remarks he now only advises the removal of the malleus; the incus need not be removed if it cannot be found with ease, as at times neither the incus nor the stapes are to be seen. The membrana tympani, he stated was apt to be reproduced, and this was to be prevented by subsequent operations. His success has been very good in cases of long standing or chronic suppuration, by removal of the necrosed bones and a portion of the diseased tissue.

The following are the conditions he stated, where it is of benefit by the operation in otitis media chronica.

1. Deafness.—This has been improved in most cases, but *not in all*. This is the writer's experience in a few cases of which he has a positive knowledge.

Tinnitus and Vertigo.—In this a larger number are relieved, especially if the cases are the result of purulent otitis media, as the pressure of pus, etc., is removed, and there is a better opportunity of applying the proper remedies to the diseased surface. The vertigo is not relieved in all cases by the operation, especially if there has been a true Menière's disease, but it may be if there be simply Menière's symptoms, with no change in the semicircular canals, cochlea or brain. Dr. Sexton employs ether as the anesthetic. He illuminates the ear by the electric head-light battery, to which a rheostat should be attached in all cases so as not to destroy the head-light.

The operation in chronic (dry) catarrh of the middle ear, (when the tuning fork must be always heard on the mastoid process) as performed consists, first, in making an incision behind the short process of the malleus, continuing it by means of a probe-pointed knife, if the perforation is not large enough to permit the withdrawal of the malleus. While the incus is held in position by its attachment to the malleus in front, and by its short process behind, the long process may be seized by the forcep and the entire bonelet withdrawn. With a curved two edged tenotome, then sever the tendon of the tensor tympani muscle by cutting upwards, behind the short process of the malleus. With a probe-pointed knife sweep about the entire periphery, seize the malleus at or about the short process, and withdraw the malleus and membrana tympani attached to it. Any hemorrhage is gently mopped with baked or iodoform five per cent. cotton, and the meatus lightly stopped with the same, and then let it alone for twenty-four hours. The patient should remain in bed for twenty-four hours, and in the house or

hospital for five days. Stop the ear with cotton when first going out. All sudden movements of the head, or anything having a tendency to produce congestion should be avoided. If suppuration or mucous discharge should occur, cotton must not be worn in the ear. If the membrana tympani re-form it must be torn down.

The indications for the operation are, first, rigidity from ankylosis in the ossicular canal, second, great impairment of the function of the drum (tympanum) as a result of catarrhal, acute or non-suppurative inflammation; third, where there is very great relaxation of the transmitting mechanism, giving rise to severe autophonic noises, vertigo, etc. The drum-head is detached in the upper part by an incision so as to uncover the incudo-stapedial articulation. This is usually accompanied by a loud and distinct "clack," and leaves the detached end of the incus—but sometimes the incus is not seen and must not be groped after—a bent probe is gently passed over its surface, and some of its envelope detached. It is then brought down with the forceps, tight traction being made. The remaining attachment of the drum-head should then be separated with the knife, and together with the malleus removed.

In the recent work of Dr. Roosa, of New York, on pages 436-7,¹ he gives his views on the operations upon the drum-head and ossicles, especially the operations for the removal of the latter for the relief of the tinnitus and impairment of hearing in chronic non-suppurative inflammations. "Dr. Sexton has read several papers upon the subject, but the profession as yet remains unconvinced, I think, as to the results of this procedure in such subjects. Further experience, and the details of a fair number of cases in which good results have been obtained, are necessary before the judgment founded upon the failure of our best men, with the same class of cases, and with the same operation, is required, before the removal of the ossicles is generally adopted as a therapeutic resource. In Sexton's earlier papers he advocates removal of the ossicles, but to judge from his latest reports, published in the *Archives of Otology* for May, 1891, he removes only the malleus. The incus and stapes he now admits are not always visible. The membrana tympani is also removed. This is very apt to reform, when the hearing does not continue to be much improved. We advise a careful consideration of Lucæ's and Politzer's cases as well as the isolated cases of Prout, referred to, before too high hopes are had as to the efficacy of this operation in any considerable class of cases. It is, however a sound surgical procedure in chronic suppurations as a means of removing necrosed bones and hopelessly morbid tissue, but this is no

¹A Practical Treatise on Diseases of the Ear, by D. B. St. John Roosa, M. D., L.D. D. Seventh Revised Edition. W. Wood & Co., New York, 1891.

new discovery, and has no bearing upon the present subject."

Lucae divided the posterior pocket or fold of the membrana tympani, in what he terms "dry catarrh" of the middle ear, where there is a marked sinking inwards of the handle of the malleus, and great prominence of the short process, and where the Eustachian tube is permeable. Lucae used a bayonet-shaped needle and the incision is made from below upwards. Politzer performs the same operation, the incision being a longitudinal one at right angles to the long axis of the fold between the short process of the malleus and the peripheric end of the fold.

Dr. Prout divides adhesions between the membrana tympani and the promontory with a very small iridectomy knife having a long handle.

In the following case we have modified and combined the methods of Sexton and Prout.

EXCISION OF THE MEMBRANA TYMPANI AS A MEANS OF TREATMENT
IN OTITIS MEDIA (CATARRHALIS) CHRONICA, WITH IMPROVE-
MENT OF HEARING AND REMOVAL OF THE TIN-
NITUS AND VERTIGO.

E. H. K., aged 46, a daughter of one of our deceased county Judges was left dependent upon her own exertions for a livelihood. When she presented herself June 9th 1891, at our office for treatment, she was profoundly deaf from otitis media catarrhalis chronica of many years duration. She had also suffered from chronic rhinitis with nasal hypertrophics.

On testing her hearing by watch of sixty itches, it was not heard on close contact on the right ear, and only three inches on the left.

Miss E. H. K. *status praesens* June 18th, 1891.

RIGHT EAR.—Membrana tympani thickened; the short process prominent; the handle attached to the promontory and the whole malleus was twisted on its long axis (torquid) Gruber. The air enters the tympanum. H. W. close (pressed contact). Tuning fork full C. Reirer's test shows the auditory nerve normal. Bone conduction good. Tinnitus (from pressure) escaping steam, hissing and roaring.

LEFT EAR.—The better looking taking all points in topography of the membrana tympani, etc. Conditions the same as in fellow ear: air enters the tympanum full and well. But one section (posterior and superior) moves from auto-inflation. H. W.—3 inches Reirer's test negative.

The auditory canal was relaxed and dry with a general congestive condition; bled on rough contact of cotton. Everything has been done for her relief both by myself and by Dr. Jurist, Laryngologist of the Jefferson Medical College Hospital.

A radical operation was proposed, excision of the membrana-tympani, and she consented to a trial, as she had great difficulty in being understood in her business. We sent her to our assistant, Dr. S. MacCuen Smith, to obtain his opinion of the case, and the following was his report:

PHILADELPHIA, October 7, 1891.

"Have examined your patient Miss E. H. K., and find the osseous conduction of sound quite good, and in other respects I should think her case one es-

pecially suited for the operation suggested, i. e.; excision, of the membrana tympani. I am at your command in the matter of assistance."

After suitable preparation the patient was admitted into the Woman's Surgical ward at the Jefferson Medical College Hospital, on Friday, February 5th 1892. She was operated upon on Saturday the 6th, Dr. Eads, one of the surgical assistants administering the ether by carefully dropping it on a folded towel until there had been employed some four ounces, but she was not profoundly unconscious. We then directed her to be given a few whiffs of chloroform which had the desired effect, but in a few seconds respiration became embarrassed and the chloroform was withdrawn, artificial respiration was performed and after prompt recovery the ether was again resumed and the operation performed.

The first difficulty was the great relaxation of the lining membrane of the auditory canal which was pushed before the Gruber speculum. A bivalve was then tried but with no better results; a large sized ordinary Politzer speculum was then employed with the illumination of the electric light. Another difficulty in her case was, that after performing the double incision the canal was filled with blood, which was very much in the way during the whole operation. In cutting around the *malco-incudal* joint, found it very firmly ankylosed, so that it could not be removed by a strong pair of forceps, so after using all the force considered justifiable, Dr. Smith, who assisted me, tried to remove it, but he had no better success, although he found the section complete all around the membrana tympani, and also the double incision running up to the membrana flaccida. After removing the membrana and cleansing the parts and blowing iodoform powder into the canal, plugging it loosely with baked cotton, the patient was removed from the operating room to the ward. She had some oozing of blood from the ear, which was removed when the cotton became saturated; there was no pain. She had considerable nausea from the anesthetic, but had no bad symptoms, and was able to leave the ward on the ninth day after the operation greatly improved in hearing, being able to hear with that ear when the other was closed.

On examination ten days later, she stated that everything sounded loud to her. She also heard the watch half an inch from the ear which before she could not hear on close contact. The following is her own statement, she being well educated and intelligent:

"Am both pleased and surprised with the result of the operation, for although I was not very sanguine of deriving much benefit from it, at least I would not let myself hope too much fearing a disappointment, yet I was willing to try. From the very first day after the operation I found an improvement—voices at the other side of the room were loud and unnatural, but I could not distinguish the words—the footsteps which before seemed to move noiseless along the bare floors, now seemed like the tread of heavy shoes.

I can now hear the voice and speech given in an ordinary tone and without being very near the speaker. The noises in the streets of wagon and cars are very loud but sound as if the ground was hollow. All sounds and voices seem loud and unnatural excepting music, which has lost none of its sweetness. All my friends are surprised and pleased with the improvement in my hearing, and say it is no effort to make me hear them now. This is all without my ear being entirely healed, and filled with cotton wool. I am now waiting to hear what improvement I will find in being able to hear a sermon or address in public.

I have tried to give you a very correct account. I have a sound in my ear like puffing of steam, always worse after coming upstairs, and sometimes it is so faint that I forget it"

"Dr. Smith to-day, the 13th, after operation, examined my ear, and thinks it is getting along very well, am still pleased with the improvement in my hearing, and I think already get along better at my work."

The patient presented herself on twelfth day, and we removed considerable dried blood. Tested her hearing and found her progressing most favorably. Again on February 17th my patient reported as follows:

"Hearing continues good and the harsh sounds are disappearing."

Tested her hearing in ordinary conversation with her face turned from me, and she heard me distinctly at a distance of thirteen feet.

Two weeks later she reports: "Yesterday was the first test I have made of my hearing, since the operation, in church, and it was a complete surprise to me, for I had never imagined that I would find such a great improvement—I had no difficulty in hearing the lessons read and in fact all of the service and I was able to join in myself—and that is what I have not been able to do for a good many years—fifteen or sixteen years I think—and the great volume of sound that came from the organ, almost overwhelmed me, I was going to say—perhaps that is almost too strong a word—yet when I tell you that I have often been in doubt whether the organ was being played at all—it would be so indistinct, at times, and yesterday the difference was so great. I find a great improvement in many ways. I get along much better at work—and my friends do not have to strain their voices to make me hear."

One month and five days after the operation. Since her last visit she reports: "Have had some pain in ear, but on blowing nose forcibly some blood passed, and the pain disappeared with no return since. Visited a friend in the country on Sunday, who stated that it was like a revelation the restoration of her hearing. At a business meeting was able to hear all that was going on when formerly I heard not a word."

NASAL POLYPUS.*

BY DR. CARL SEILER,

LECTURER ON LARYNGOLOGY MEDICAL DEPARTMENT UNIVERSITY OF PENNSYLVANIA.

Gentlemen :—The case which we will now review together is one illustrating some of the many reflex phenomena so frequently met with in diseases of the nose and throat.

It is a well-known fact that pressure upon the sensory branches of the nasal branch emanating from Meckles' Ganglion will produce pain of a neuralgic character in the other branches emanating from the same nerve center and thus frontal headache and orbital neuralgias are so very commonly caused by pressure due to hypertrophies or neoplasms in the anterior nasal chambers.

The general practitioner is so frequently baffled in his efforts to combat these neuralgic pains in the frontal region that a few hints as to their possible cause may be interesting to you.

It has been my experience that just such cases may be speedily and effectually relieved by ordinary bleeding at the nose, which procedure was first recommended by my friend Dr. Glasgow, of St. Louis, by puncturing the mucous membrane of the nose to relieve the neuralgic headache in the same manner that is resorted to by the experienced horseman, to relieve the animal of the blind staggers; although, very effective in many cases, this method will do no good in a minority of instances, in which the pressure upon the sensory nerves cannot be relieved by blood-letting. In these few and often perplexing cases, a careful examination of the anterior nasal chambers will reveal one of a number of conditions; such as the presence of nasal polypi, deviation of the septum, hypertrophy of the turbinated tissue covering the middle turbinated bone, or perhaps even a splitting, and consequent deviation of the middle turbinated bone.

Any one of these conditions may, and frequently will give rise to the distressing and permanent orbital neuralgias, and sick headaches, which we are called upon to treat, and which will not yield to any of the new or old remedies, because they are simply symptoms of pressure and nerve irritation remote from the seat of pain; this of course is a fact well known theoretically by all well informed physicians, but at the same time is too frequently lost sight of, and for this reason, I humbly beg the indulgence to again call your attention to the fact, that no means of investigation should be omitted, and no possible cause should be lost sight of, or forgotten in the examination and treatment of these cases.

*Lecture delivered before the fourth year and graduating classes of the Medical Department University of Pennsylvania.

I myself was forcibly reminded of this fact but a short time ago, when a patient applied for treatment, complaining of orbital neuralgia on the left side, of several years standing.

She had consulted a number of prominent practitioners, and had taken at their suggestion all the old and new anti-pyretic and anti-neuralgic remedies, such as, quinine, anti-pyrine, anti-febrine, phenacetine, salol and other patent remedies and preparations more or less unknown, without benefit.

Her general health was tolerably good, with the exception of slight gastric disturbances, which might be referred to the innumerable drugs she had taken. All she complained of was, incessant harassing pain which seriously interfered with her sleep.

An examination with the ophthalmoscope revealed no defect of the lenses but a slight congestion of the retina, and prolonged use of the eyes made no change in the pain in her head.

She complained of no cough, and no expectoration except in the morning, when she said her throat was dry.

Rhinoscopic examination of the anterior nasal chambers, revealed a condition of the mucous membrane not often seen in the general run of cases.

The mucous membrane was pale, pinkish in color, dry, yet there were no scabs, and no apparent deformity of the septum nor hypertrophy of the turbinated tissue of the lower turbinated bone, in fact, she insisted that she never experienced any stopping up of her nose and was quite indignant when told she was suffering from nasal catarrh.

The middle turbinated bone however, on the left side showed a distinct cleft together with a hypertrophy of the erectile tissue of that portion of the bone nearest the septum, so that the mucous membrane covering the septum and the turbinated bone were in such close contact as to prevent the passage of even the thinnest probe at hand.

In order to obtain a better view of the cleft of the middle turbinated bone, I introduced a pledget of cotton saturated with a 4 per cent. solution of cocaine and after its removal, in the course of a few minutes time, the reduction in bulk of the erectile tissue revealed a number of small mucoid polypi in the space between the two abnormally separated portions of the middle turbinated bone.

A condition of affairs such as this, I know by experience from numerous cases previously seen, is sufficient cause for the orbital neuralgia, and the happy result following the removal of both the polypi and the hypertrophied erectile tissue from the middle turbinated bone, with the entire and total cessation of the pain in the head, proved my diagnosis of the case to be correct.

The great difficulty as far as my experience goes, is that the general practitioner has not the necessary instruments, nor the proper light, or

illuminating apparatus at hand to make an examination of the nasal chambers, anteriorly or posteriorly and frequently fails to make a differential diagnosis between the many and various conditions seen in the anterior nasal cavities, which resemble mucoid polypi, so that as a Specialist, it is not uncommon that patients are referred to me by my friends living away from the city, for the removal of mucoid polypi as diagnosed by them, that I find on careful examination, with proper instruments and suitable light, no polypi to be present. Or it may happen, as it has in my experience, that even a deviation of the septum has been mistaken for a mucoid polypus, and I therefore would like to lay stress upon a few of the clinical features which are particularly noticeable in those cases. In the first place, there is a peculiar and unmistakable "twang of the voice in speaking" when polypi are the cause of the trouble. Second, the change of pressure, that is, the increase and decrease of bulk, owing to the hygroscopic property of the neoplasms, produced by the hygrometric condition of the atmosphere, and therefore, the pain of neuralgic character is also augmented by an increased amount of moisture in the air, just as we notice it in ordinary neuralgias in other parts of the body. Third, entire absence of any odor, of secretion, increased amount of obstruction of the nose, and the absence of scabs, or dry accumulations of mucus, all of which latter conditions are so frequently found both in hypertrophic catarrh and deviation of the septum, as well as in atrophic catarrh, particularly the dry scabs in the latter.

There should however, be no possibility of any mistake in the diagnosis, if proper instruments and illuminating apparatus are used for the inspection of the anterior nasal chambers, because, taking into consideration the clinical features of the case before you, the observer will notice in most cases masses of a glistening yellowish white appearance in the anterior nasal chambers, which to a greater or less extent obstruct the breathing, and in many instances, move forward and backward with the air current in respiration, when the lower part of the nose is still free.

Or as in the case of the fibroid variety of nasal polypi, which spring as they frequently do, from the bony plate of the septum, present in anterior rhinoscopy simple white glistening obstruction; or as sometimes but rarely happens, the polypus may be of the cystic variety. A distinction with the eye is impossible, and no one is to blame for mistaking such a neoplasm for a mucoid polypus. The eye alone, even with the best apparatus for examination, cannot be entirely relied upon, but to make a definite and final differential diagnosis, whether the nasal obstruction be a deviation of the septum, anteriorly or posteriorly, or middle hypertrophy of the turbinated bones, a mucoid, fibroid, or cystic polypus, or whether it be of a sarcomatous nature, and it becomes

necessary to use the probe in conjunction with the eye to determine the consistency, sensitiveness and attachment of the supposed neoplasm in the anterior nasal chambers.

It is of course beyond the scope of my remarks to go into detail as to pathology or etiology of the numerous tumors and excrescences which may be found in the nose, and therefore, as my time is nearly expired, I shall simply give you an outline of the approved and generally used method of removing the mucoid variety of nasal polypi, such as we find in the case before us, and which in its general aspect, is so like the one I gave you a history of, together with the results.

In fact these two cases are so much alike, that I do not hesitate in assuring this patient, with almost absolute certainty that her orbital neuralgia will be relieved as soon as every vestige of the nasal polypi as well as the hypertrophied turbinated tissues of the middle turbinated bone have been removed.

The old and unfortunately still practiced method of removing such neoplasms, was by what is called evulsion, which was as follows: The surgeon introduced a pair of forceps similar to, but larger than the ordinary dressing-forceps into the nostrils, grasped whatever he could catch, and holding the blades closed, twisted the instrument, and finally with a jerk, pulled out whatever would come, which of course as you can imagine was accompanied by considerable pain and suffering to the patient, as well as copious bleeding of the nose.

This procedure was repeated until the patient (as well as sometimes the surgeon) became tired out, and the natural result was of considerable benefit to the patient in the way of increased space in the nose, less headache, and greater clearness of articulation, but in a few months time, the patient would again experience the same difficulty, as before the operation, and would either have it repeated, or, being afraid of the pain and suffering, let nature take its course, and go to an early and unavoidable grave for the want of proper nasal respiration.

Fortunately within the last few years we have passed beyond this middle age of barbarity of blindly pulling out whatever comes within the grasp of the forceps, and we now deftly surround a mucoid polypus which always springs from the cleft in the middle turbinated bone, with a thin steel wire which when drawn into the tube of the snare, by the slow motion of the milled head screw, adapts itself to the very pedicle of the tumor, and cuts it off close to its inception without pain to the patient, and but very little if any bleeding.

Of course, this procedure requires skill of both eye and hand, and has to be repeated for each and every individual polypus, so that it becomes more tedious to the surgeon, but not to the patient in most cases, but the result is so eminently satisfactory that but little fear may be entertained by anyone who happens to suffer from this peculiar af-

flection, of not being cured.

After visible, and if I may be allowed to use the term, "feelable" polypi have been removed, it is well to let the patient rest a few days so that a future examination of the parts may not be obstructed by the slight hemorrhage which naturally follows.

If on inspection on the second or third day after the operation, the peculiar condition which is generally found, namely, splitting of the middle turbinated bone into two parts, the probe delicately inserted into this cleft, will readily detect the denuded bone which should be scraped with the curette or with Volkman's spoon, until all roughness has disappeared.

Of course this operation of scraping would be extremely painful if no anesthetic is used, but ether or chloroform are unnecessary, because a pledget of cotton saturated with a 4 per cent. solution of cocaine, introduced into the cleft and allowed to remain five or ten minutes, so reduces the sensibility of the mucous membrane, that little or no pain is experienced by the patient.

Some surgeons prefer the use of galvano-cautery, or others use chemical caustics, with a view to prevent the return of the polypi, but my experience, as well as the experience of many other Specialists in this line, have conclusively shown that the scraping as indicated above, is not only less painful and less tedious, but more certain in its results. and I would therefore recommend you to use it to the exclusion of all other methods.

I can only liken mucoid polypi to oysters, which attach themselves to decayed stumps or moss covered rocks at the bottom of the sea, and no matter how often you remove them, they again spring out and grow, and the oyster bed remains for years productive of the succulent delicacy, so highly prized and so cheaply bought; but remove the stumps and the moss covered rocks together with the oysters and the supply will be exhausted in one season, so it is with mucoid polypi, as experience has taught us, that no matter how frequently we remove the polypi themselves, new ones will grow in their place, and we cannot prevent their return until we destroy the bed upon which they grow, which consists of the stumps and moss-covered rocks, in the shape of denuded bones, in the cleft of the middle turbinated bone.

THROAT DISEASES WITHOUT OBJECTIVE SIGNS.

By J. C. MULHALL, M. D.,

PROFESSOR OF DISEASES OF THE THROAT AND CHEST, BEAUMONT HOSPITAL MEDICAL COLLEGE;
CONSULTANT AT THE ALEXIAN BROTHERS HOSPITAL; ST. MARY'S INFIRMARY;
SOUTH SIDE DISPENSARY. ST. LOUIS.

Whilst the title of this paper may not be strictly correct, it will serve at least to call attention to a class of cases wherein the patient's complaints are out of all proportion to the objective signs. Hypochondriasis and hysterias are excluded.

Mistakes in the diagnosis of pharyngeal diseases are very common; on the part of the specialist because the slightest pathological change on the pharynx explains everything to him. Many so called specialists are not what they should be, namely, good general practitioners. To be able to say whether a given condition in the throat completes the evidence in a case and accounts for the etiology, symptomatology and pathology involves a practical knowledge of nearly all the diseases to which man is subject. In our country of imperfect medical education there are very many self styled specialists whose education has been as follows: A two years course at a medical college, six months or a year at a special clinic, and they call themselves specialists and fling themselves on the public. This is the class of specialists that brings the domain of specialism into disrepute. Many general practitioners have only been brought into contact with this class, and from such experience thoughtlessly condemn specialism. This is the gynecologist who sees everything through a speculum, this is the throat doctor who sees everything in a mirror. The true specialist is one who by a long and large experience has acquired general practical knowledge and keeps abreast with the times, but who by special practice acquires and maintains special skill.

The mistakes of the general practitioner in throat practice arises from want of skill in examination. Having never acquired this, he can never formulate his experience. He is almost in the same boat with the man who diagnoses diseases of the retina without an ophthalmoscope.

To take for example a group of cases, those in which the pathological field is limited to the pharyngeal vault. This is invisible without the rhinoscopic mirror. Yet, many such patients refer all their symptoms to the field covered by the middle constrictors and on examination with the tongue depressed nothing is to be seen. I know lately of such a patient. He had consulted several. Two told him that there was "nothing wrong." Two prescribed gargles and one a nasal douche. The true conditions consisted in the presence of two tertiary

syphilitic ulcers, and just behind the left Eustachian tube, the other at the center of the pharyngeal roof. No one had looked up there. Children with adenoid thickening in this region cannot describe their distress. The mother comes with the history that the child never sleeps well. It snores, it starts in its sleep, it awakes unrefreshed, it seems dull, apathetic and is peevish. The doctor looks in its throat and there are no enlarged tonsils. He notices that it breathes pretty well through the nostrils. Worms, colic and dentition are prescribed for and when the child does not recover its health, the mother is told that the child will "outgrow it." I have heard the story scores of times and the basis of the blunder is because nothing is seen in the throat. It is true that in children under five one can seldom get to see the pharyngeal vault, but the well educated finger tells the story quite as plainly.

Five years ago I saw the following case: A lady complained that there was "something in my throat which I cannot get rid of." Her nasal breathing was unobstructed and examination with a tongue depressor revealed nothing abnormal. The rhinoscope disclosed a soft polypus as large as a black walnut attached to the posterior end of the middle turbinate, hanging on to the pharynx and yet not completely obstructing the inferior meatus. She had suffered twelve years, had consulted the profession at New Orleans, Galveston, and Memphis, she had at last almost concluded what they evidently had, that she was a crank. She had always referred her symptoms to the region underneath a line continuous with the upper teeth.

It is a matter of general knowledge that frequently sufferers from nasal catarrh complain more of the throat than the nasal symptoms, but there is also a certain number who complain alone of the throat symptoms and volunteer no information about the nose, and yet on ordinary inspection nothing whatever is to be seen in the throat. These pharyngeal reflexes are not more curious than the knee pain of hip joint diseases, the shoulder pain of liver diseases, or the ear ache from a diseased tooth.

The irritable throat often found associated with chronic gastric derangements, is one about which mistakes are often made. If, in large cities especially, we examine the pharynges of people between the ages of thirty and fifty, it is seldom that we do not find something not strictly normal. It is often thickening of the pharyngeal angles, or varicose veins, or a few granulations, or a patchy congestion, or an over abundance of mucus, and yet there are no throat symptoms. Let such a patient become a dyspeptic and it is quite possible for him to have throat symptoms. He applies for treatment and the slightest changes seen are mistaken for the causes of his throat illness. I have known such throats to be painted three times weekly for six months, and gargles prescribed for home use. The real cause not being recognized, the throat naturally gets no better. On the contrary, the remedies usually ag-

gravate the distress. Again and again, have I seen scientific dieting and exercise cure such throats in a month. One would no more make local applications to such a throat than he would to the drum of an ear aching because of a diseased tooth.

In many such throats I have been unable to see any difference in the throat before and after the cure of the disordered digestion, and yet the throat symptoms had vanished. There are many individuals who never have an attack of "billiousness" without experiencing an attack of catarrhal pharyngitis with flabby relaxation of palate and pharynx and who indeed apply solely for relief from the throat symptoms. The rheumatic sore throat is a rare disease. The prevailing features, I should say are, very severe pain with little or nothing to show for it. The suffering is out of all proportion to the objective signs. The disease is usually unilateral, confined to the tonsil and adjacent pillars of the fauces or angle of the pharynx. The parts are very sensitive to the touch, very slightly swollen, of rather a violet red, shading off into the surrounding healthy pink. There is congestion rather than inflammation. It may be acute or chronic and may occur in an individual without previous rheumatic history. Hot water gargles and salicylic acid pushed to tinnitus, with appropriate hygienic measures readily cure.

The cheesy deposits which take place in the lacunæ of the tonsils, and frequently cause a fetid breath often remains undiscovered on superficial examination, often indeed nothing of a tonsillar mass is to be seen unless one takes the precaution to pull to one side the anterior pillar of the fauces, when he may see a tonsil not larger than a hazel nut, but holding in its diseased follicles the foul smelling cheesy secretions. A good rule is to make the patient gag. This act everts the lateral pharyngeal walls and during the act one may often detect diseased lacunæ. Often such patients go for months without these concretions, when at once, without obvious cause, the lacunæ become filled with the cheesy masses, so that one cannot always say that the patient is not subject to these concretions as he may visit you during a health interval. Again, some of these attacks are limited to certain follicles, and other attacks involve a different set. Practically one destroys with the galvano caustic every follicle to be found, to make a radical cure. Anything more than the aggregation of a few glands in this vicinity, hardly to be found except on careful inspection, is, in any case, disease. When the mass is large enough to require the dignity of the name, "tonsil," it is pathological, not physiological, in my humble opinion.

An affection of the base of the tongue giving rise to throat symptoms has of late years received considerable attention, namely, hypertrophy of the papillæ circumvallate. When quite large they interfere with

the action of the epiglottis, and by friction against this organ, often produce much distress. The most prominent symptom is a feeling of weight or constriction in the region of the hyoid bone. This condition I have frequently remarked to give rise to no symptoms, but on the other hand I have effected a cure of this sense of constriction by removing the papillæ. The affection is most likely to cause symptoms in singers with high soprano voices, for the reason that the higher the note sung, the more erect becomes the epiglottis. Its erection is prescribed by these hypertrophies and the notes most valuable to the soprano the extreme high ones, are, either not possible, or else their quality is destroyed. I was once able to restore three high notes, by removing these growths.

The feeling somewhat resembles the hysterical "ball in the throat" and should such a patient happen to be a neurotic the mistake of calling it a hysterical throat may be made, for, with the tongue depressor the throat may appear normal. To see these lymphoid overgrowths the laryngoscopic mirror must be used.

As an illustration of the fact that we may have gross objective signs with few or no subjective symptoms, I may especially mention, primary and tertiary syphilis. It has occurred twice in my private practice to have been consulted about an enlargement of the glands beneath the angle of the jaw, wherein the patient made no mention of throat difficulty, and where the source of trouble was an infecting chancre of the tonsil.

I have been often surprised at the absence of pain in large and deep tertiary ulcers at the centre of the pharynx and on several occasions the subjective symptoms have been those merely of a post nasal catarrh.

I trust that these few hastily written observations gleaned from practice may serve to show what dissimilarity may exist between subjective and objective signs and symptoms in throat disease. As Goodell says of the uterus so one may say of the pharynx; there may be pharyngeal disease without pharyngeal symptoms and pharyngeal symptoms without pharyngeal disease.

TREATMENT OF SOME NASAL DISEASES.

By M. D. LEDERMAN, M. D.

CLINICAL ASSISTANT TO THE CHAIR OF LARYNGOLOGY AND RHINOLOGY, AT THE NEW YORK POLY-CLINIC; CLINICAL ASSISTANT TO THE THROAT DEPARTMENT OF THE MANHATTAN EYE AND EAR HOSPITAL; ETC.
NEW YORK.

My excuse for writing this paper, is to call attention to a method of treatment, which will prove itself both rational and useful. Much has been said and written upon the subject of nasal diseases; and many are the writers who have championed their favorite operation for the relief of the obstructed nasal passages.

My object is to bring to the notice of the profession, an important element towards the production of good results, in the treatment of these diseases. The point to which I allude, is the absolute importance of preliminary treatment.

In the realm of general surgery it is always the aim of the operator to build up the system of his patient, as well as the seat of trouble, to such a degree as will admit of an operation without the probability of any untoward complication. As this maxim has been proven the only true method to follow, why should we not follow the same rule in our special work?

The failure to get good results from operations in the nose is due in a great many instances, not so much to the after treatment, although this has its immediate value, but to the neglected preliminary treatment. Very often we hear of cases which have been operated upon, and the patients claim they are not relieved to any extent. If this preliminary course of treatment was adhered to more closely, I think we would not hear so often of severe hemorrhage, excessive granulations or any of the numerous sequelæ, which may arise after intra-nasal operations.

We generally find that where there is a condition of the nasal cavities which requires surgical interference, there is also present a chronic form of inflammation, which has kept the tissues in a state of congestion. It is to this pathological factor that treatment should be applied before any operation be performed. To this rational indication our attention was directed by Seiler.

This preliminary method of treatment may be carried out in different ways. The course of treatment which has given me excellent results is the following:

The patient's nasal chambers are sprayed with "Seiler's antiseptic solution."* This is preferable to Dobell's solution, on account of its

* The antiseptic solution contains the following ingredients: Sodii bicarb., Sodii biborat. each 1 ounce; Sodii benzoat., Sodii salicylat. each 20 grains; Thymol. Eucalyptol each 10 grains; Menthol 5 grains; Oil gaultheria 6 minims; Glyceria 8½ ounces; Alcohol 2 ounces; Aqua sufficient quantity to make 2 gallons.

property for dissolving the tenacious mucus more rapidly; also for its pleasant odor, at the same time acting as a deodorizer.

For convenience of your patients for their home use the solid ingredients of the above solution are combined into a compressed tablet, and one tablet dissolved in two (2) ounces of water, is equal to the standard solution. It is of the greatest importance, however, that the same specific gravity should be maintained as is found in the above solution. If such is not the case, or if the several ingredients have not been thoroughly triturated before compressing the tablet, a smarting sensation will be experienced by the patient using the solution made from the tablet as a nasal wash, and instead of diminishing it, the congestion will thereby be increased.

Following the spray of the antiseptic solution, an application of the glycerole of iodine mixture should be made.

This mixture consists of:

R	Iodine (crystals)	-	-	-	-	-	gr. viii.
	Potass. iodidi	-	-	-	-	-	gr. xxiv.
	Glycerini	-	-	-	-	-	f 3 ss.

The effect of the iodine upon the mucous membrane being very beneficial in reducing the inflammation and allaying the hypersensitiveness. Applications of this mixture should be made to the naris every other day, or at least twice a week. These can be made either by a cotton wrapped applicator, or in the form of a spray. The latter is preferable. The patient may complain of a smarting or burning sensation resulting from the application; this can be relieved by throwing into the nostrils a spray of any of the petroleum extractives, as, zero-cosmoline, liquid albolene, or benzoïnol. The last named preparation, in combination with eucalyptol, twenty grains of the latter to the ounce of benzoïnol, has proven very beneficial in allaying this burning sensation, resulting from the iodine application. The benzoïnol itself is bland, odorless, tasteless and quite soothing. In combination with the eucalyptol it leaves behind a sensation of coolness. In many of my formulæ for laryngeal, as well as for nasal sprays, I have found it an exceedingly valuable base.

This treatment should be continued until the excretion resulting from the catarrhal condition gradually diminishes, the mucous membrane becomes pale, and other signs of inflammation have subsided. In some instances a profuse secretion of mucus follows the application of the iodine mixture; this ceases in a short time and leaves the nasal cavities more free.

After such a course of treatment the shock which may result from surgical manipulations is greatly lessened and the wound will heal more kindly and rapidly.

In simple chronic nasal catarrh, if this treatment is carried out faith-

fully, a cure may be effected in a comparatively short time. In those cases in which there is a dryness of the mucous membrane in the nostrils, and a thick glossy mucus discharge from the vault of the pharynx, the topical application of the iodine mixture to the post-nasal cavity is of great benefit in stimulating the serous glands and making the secretions more watery. In making these applications to the pharynx, great care must be taken to prevent the medicament from entering the larynx, by running down along the posterior wall of the pharynx. If this unfortunate accident happens, a severe laryngeal spasm is the result.

In acute coryza the following treatment suggested by Hinkle, is very useful. A pledget of cotton, wet with a four (4) per cent. solution of cocaine is carried into each nostril, and left there for about five minutes. The cotton is then removed, and is followed by a spray of a four (4) per cent. solution of antipyrine. The patient should not be allowed to blow the nose until after the spray of antipyrine. The latter spray may produce a tingling sensation, this, however, rapidly subsides, and leaves a feeling of relief from the pressure. Menthol has also proved itself beneficial in this common affection. In combination with cocaine it is a valuable aid in relieving the turgesence of the turbinated tissue, and also in allaying the hypersecretion. The feeling of coolness remaining in the air passages, after its use, makes it a very pleasant as well as a valuable adjunct to our solutions. It prolongs the anesthetic and depleting action of the cocaine. The following combination has been a very useful one in my hands:

R Cocaine Muriate,	Menthol,	each	-	-	-	gr. x.
Benzoinol	-	-	-	-	-	f 3j.

M. S. Spray.

In closing this short résumé, I must not forget to mention the after-treatment of surgical cases. The wound should be cleansed by some suitable antiseptic spray a few times during the day of the operation and the day following. The patient should then be examined, and condition of wound noticed. Very often the spray may be stopped in a few days. Of late, the new antiseptic, eucophene, has been dusted on the wound; and nothing further given. Some observers have claimed excellent results from its use. It has also been used for the relief of hemorrhage following surgical procedure in the nose. For the relief of this symptom I have used a fungus, known commercially as spunk. It is of a brownish color, soft, and can be cut in any shape desired. It can be introduced into the nares, against the cut surfaces, and may be left there for a day or two without any ill effect. It stops the hemorrhage by its expansive property, producing pressure upon the bleeding surfaces. When it is removed it comes away without adhering to the wound, thus preventing secondary hemorrhage. It

prevents adhesions from forming after operations and has been used for dilating purposes in the nose. Mr. Latham, chemist, of 75th street, and 3d avenue, New York, has combined it with bichloride of mercury, iodoform, and tannin. I prefer to use it plain as the antiseptic process makes it stiff and unyielding.

Peroxide of hydrogen has been found of service in the controllment of hemorrhage, following operative measures in the nose. In cases of hemorrhage resulting from the removal of posterior hypertrophies of the turbinated bodies, this remedy in full strength, should be sprayed or injected into the nose, before plugging of the posterior nares is resorted to. It not only acts as a hæmostatic, but as a powerful antiseptic as well. When it is brought in contact with diseased surfaces, either of the skin or of mucous membranes, its decomposition takes place immediately, and at first "ozone," which is the result of this reaction, coagulates the albuminoid matters of the secretions, the pus is destroyed and also the bacteria. It is claimed to be of service in the treatment of atrophic and rhinitis.

To obviate the unpleasant symptoms of swelling and reaction which may follow the use of the galvano-cautery, I have used of late, an application of the trichloracetic acid, in crystalline form, in the manner suggested by Dr. Gleitsman¹ of this city. It is applied immediately following the cauterization, and the resulting eschar is dry, firmly adherent, and as a rule accompanied by no unpleasant symptoms. This quality of dryness is a great advantage of the acid, inasmuch as it does not spread to other tissues, as do similar deliquescent caustics.

1029 PARK AVENUE.

¹Annals of Ophthalmology and Otology, January 1892, p. 62.

ADENOID VEGETATIONS AT THE VAULT OF THE PHARYNX.

BY WILLIAM PORTER, M. D.

PROFESSOR OF DISEASES OF THE THROAT AND CHEST IN ST. LOUIS COLLEGE OF PHYSICIANS AND SURGEONS; PHYSICIAN TO ST. LUKES HOSPITAL, TO THE PROTESTANT HOSPITAL, TO THE CITY HOSPITAL, ETC.

While the literature of this subject has been mainly the product of the last ten years only, its study is replete with interest and importance both to the general practitioner and the specialist. That the writings of Meyer and Lowenberg have been accepted by the profession, is shown by the many valuable essays that from time to time appear upon this condition or some of its complications.

It is not the object of this paper to set forth a complete bibliography, but rather to point out some of the injuries likely to arise from the presence of adenoid tissue in the upper pharynx and to give some practical rules for its detection and removal. At the beginning it is well to remember that this physical fault is much more common than many suspect and as will be hereafter shown, is the cause of many distressing complications in childhood.

The etiology cannot with certainty be always made out. In some cases doubtless the condition is congenital as the infant is from its birth, unable to breathe through the pharynx and nostril. Age is certainly a predisposing cause, for the large majority of cases are among children and oftentimes a favorable change begins about puberty. Repeated colds and catarrhal conditions of the mucous membrane or anything that stimulates glandular activity in this location, may act as causes.

The complications and sequences of glandular hypertrophy in this region are many and important, inasmuch as they are not only productive of immediate trouble but also of more permanent injury. The most common noticeable change is in voice and respiration. The blocking up of the natural upper air passages, necessitates mouth-breathing with all its disagreeable results. The stupid appearance, the harsh expiration and the almost inevitable snores of the child so affected are all too frequent symptoms to be overlooked. The articulation is also imperfect, the voice has lost its resonance and the nasal twang and mushy word formation point unerringly to the location and generally to the character of the obstruction.

Owing to the involvement of the pharyngeal end of the Eustachian tube, the function of the canal is often lost, and with the patency of the tube comes more or less diminution of hearing. Dr. Blake, (*Boston Medical and Surgical Journal* March 15, 1888) estimates that aural

complications are present in 83 per cent of all children who have adenoid growths in the pharynx and shows that from this cause there may be not only Eustachian obstruction but also purulent inflammation of the middle ear with all of its disastrous tendencies.

Two kinds of osseous deformity may result from obstructed nasal respiration in the child. 1st, of the chest wall and 2nd, of the face and palatine arch. As less than the normal amount of air is received by the lungs during inspiration, the natural expansion and growth of the chest is injured. The ribs may appear as if they had been compressed laterally, the intercostal spaces are depressed and while the upper part of the sternum may seem unduly raised, it is in marked contrast to the lower part of the middle third which often so recedes that a noticeable concavity is found over it. When this unnatural contour becomes fixed by osseous development, the child goes into adult life with the ineffaceable evidence of early impeded respiration. That perfect pulmonary function can ever go on with this deformity, is to me a matter of doubt, although it is true that a tolerance of, and adaptation of the vital organs to the irregular and imperfect boundaries are often acquired.

The second class of deformity is quite as important as the foregoing, but has not been so frequently referred to by medical writers. I cannot do better than quote from Dr. F. H. Hooper [*Medical and Surgical Reports of Boston City Hospital*, 1889.] for it is to the essays of this author that the profession is indebted for much of interest upon this subject. He says:

"Once aware of the existence of this mechanical obstacle to nasal breathing, it does not require a very vivid imagination to forecast the effects which, in the course of time it may produce in an individual if it is left in situ. These mechanical effects may show themselves on the inside as well as the outside of the body, they are chiefly noticeable in the shape of the bones and soft parts of the face, and in the shape of the walls of the chest. On the inside of the body, we can see the narrow nasal chambers, the deformed upper jaw, the high palatine and narrow dental arch, and the irregularity of the teeth. The *modus operandi* by which these deformities are brought about is evident. The naso-pharyngeal cavity being locked up, mouth-breathing results. The weight of the hanging lower jaw causes the face to become elongated. Lines and furrows are formed at the angles of the nose, mouth, and corners of the eyes, the cheeks are sunken and the nose is pinched. Dr. Henri Chatellier, of Paris, (*Des tumeurs adenoides du Pharynx*, Paris, 1886.) has called especial attention to the deformities of the bones of the head and face, consequent upon obstructed nasal respiration. He points out that the air-cavities, as the frontal, sphenoidal, and ethmoidal sinuses, and the antrum of Highmore, being normally in communication with the air, cease to develop when the circulation of air through the nose is interfered with, and hence the dimensions of the face are altered. The lower jaw, which follows its normal development, often projects beyond the upper jaw, which is contracted in front, the upper lip being drawn up, while the hard palate, from the constant atmospheric

pressure within the mouth, is pushed upwards, terminating in a sharp angle like the Gothic arch. I think there is a definite relation between these adenoid growths and the V-shaped palatine arch, which has never been appreciated in considering the acquired cause of irregularity of the teeth in children, and which I wish to emphasize. In my experience, the high-arched palate is always present in typical cases of this complaint. Moreover, I believe it to be one of the earliest mechanical results of obstructed nasal breathing. Mouth-breathing being unavoidable in these cases, the constant pressure of the air inside the buccal cavity gradually but surely, forces the hard palate upward."

I have elsewhere endeavored to show that in some cases at least the abnormally high palatine arch is due to congenital syphilitic fault especially where associated with "Hutchinsons teeth" but I freely concede the accuracy of Dr. Hooper's observations in very many cases of adenoid growths in the pharyngeal vault.

The diagnosis of adenoid growths is not difficult. The changes mentioned in voice and respiration are indications and positive information may be gained by direct examination. If it is possible the vault should be searched by the rhinoscope and to do this well the soft palate should be pulled well forward by one of the several devices for this purpose, or the ends of an elastic cord may be passed, one through each nostril into the pharynx and drawn out through the mouth. Traction on this will give ample space for the use of the small rhinoscope mirror.

Where this is impracticable, digital examination should always be made. The fore-finger of the left hand can be passed up quickly behind the soft palate while the child's head is held by the right hand. The soft velvety obstruction which is easily felt and which generally bleeds readily is characteristic of adenoid change. Hooper has pointed out a source of error in diagnosis arising from the contraction and backward pressure of the muscular fibers of the soft palate which may give to the finger the sensation of adenoid obstruction. The location, the soft, velvet, irregular surface, and the bleeding are sufficient guards against mistakes.

The treatment of these cases is removal of the obstruction. Not always is it however, that treatment is necessary. If the symptoms of obstruction are not marked, if there is a fair amount of nasal respiration and the child is near puberty, no great harm may be done by letting the patient alone, for as before stated, there is a noticeable tendency to shrinking of these growths about puberty.

The exceptional cases are not the ones as a rule, that the physician is called upon to treat. The necessity for removal is generally apparent. In some instances gentle treatment may be made effective. Repeatedly I have had the growths disappear after several raspings with the end of the finger or, in one instance, by the use of a piece of dry,

coarse sponge on the end of a pro-bang, after Voltolini's method of dealing with loosely detached laryngeal vegetations. Sometimes the pressure of a small pad of lint, saturated with sol. ferri. ammon. sulph., against the growths will be sufficient, especially if used after a part of the mass is removed by the finger or sponge. The astringent should be pressed hard up against the tissue and held in place for several seconds by the finger or probe.

When the mass is too firm and dense to permit the physician to expect success from any of these methods, removal must be made by the forceps. Often the operation may be done without an anesthetic; indeed I prefer to have the assistance of the child where it can be given. The danger of blood getting down into the lower respiratory tract, is not so great and by a little care in sponging, can be entirely prevented. It is not necessary that all of the mass should be removed at one sitting—it is often better to remove a small amount each day or two for five or six times.

The most suitable instrument is a well made pair of post-nasal forceps. They need not be large, but should be so constructed as to give accurate and firm approximation of the cutting edge. The edges need not be very sharp, for it is better to crush and slightly twist off the growth than to cut it away. A second pair of forceps with good cutting edges is sometimes needed in older children. By all means avoid rectangular forceps with long pharyngeal blades. The shorter the blade and the slighter the curve, the more easily can the instrument be used, if so be that it can be made to reach the vault. I have not had much success with the ring-knife or curette.

If the tonsils are large it is best to remove them first or so much of them as will give space enough, both for the subsequent operation and for free respiration. As soon as a free passage is established for the entrance and exit of air through the naso-pharyngeal passages, the difficulty can be considered as overcome, for return is very infrequent. For sometime after the removal of the obstruction, children should be reminded to breathe with the mouth closed, for often mouth-breathing persists as a habit when the necessity for it no longer exists.

The care of the patient after the operation is very simple. Should there be some purulent discharge for a few days, it can be easily disinfected and the parts cleansed by the application of per-oxide of hydrogen solution. A continual oozing of blood may require a weak astringent locally, though this is seldom needed.

In conclusion, let the physician carefully study these cases, not so much because of present conditions as of future injuries and because very simple operative procedure which he can himself undertake, may result in lasting good to the child.

THE TOXIC AMBLYOPIAS; THEIR SYMPTOMS, VARIETIES, PATHOLOGY AND TREATMENT.

By CASEY A. WOOD, C. M., M. D.

PATHOLOGIST TO THE ILLINOIS EYE AND EAR INFIRMARY; PROFESSOR OF OPHTHALMOLOGY IN THE CHICAGO POST-GRADUATE SCHOOL; OCULIST AND AURIST TO THE ALEXIAN HOSPITAL, ETC., CHICAGO.

The absence of a complete English treatise on the above extremely important subject has tempted the writer to undertake the rather ambitious task of gathering together the scattered observations and records of work done in this department, both at home and abroad, and of presenting them in something like a coherent whole to American readers. He has been partly moved to do this in view of the fact that so far nobody has seen fit to translate either Uthoff's classical essay [*Untersuchungen über den Einfluss des chronischen Alkoholismus auf das menschliche Sehorgan*,] or Galezowski's earlier monograph [*Des Amblyopies et des Amauroses Toxicques*, 1878.]

THE TERMS AMBLYOPIA AND AMAUROSIS—THEIR VARIETIES AND SYNONYMS. A DEFINITION OF TOXIC AMBLYOPIA.

The employment of the term *amblyopia* (*amblyus*, dull, and *ops*, the eye,) dates from the time of Hippocrates and has always been applied to those cases of deficient or weak vision not due to discoverable refractive error or to any sensible change in the ocular structures. In other words, it describes one symptom only of certain so-called functional eye diseases. But just as many "functional" affections of other parts of the body are now explained by the presence of organic alterations and have, in consequence, been removed from the former category, so we find that the discoveries of the ophthalmoscope and microscope especially have greatly reduced the number of the amblyopias. The former instrument has revealed to us many lesions in the background of the eye hidden from the oculists of the "pre-ophthalmoscopic era," while the latter has demonstrated the existence of pathological changes in the visual apparatus that were previously unsuspected or were matters of conjecture only. In spite, however, of these facts and in the face of protests made by even early writers on ophthalmology the retention of the expression "toxic amblyopia" may be defended upon the ground that as yet no other name has been suggested or generally adopted that furnishes a more definite idea of the morbid alterations in the ocular structures brought about by certain toxic agents.

Mackenzie (1) preferred the term *amaurosis* (*amauros*, dark), defining it to be an obscurity of vision due to diseases of some portion of the ocular nervous apparatus, a definition which would include and better describe some of the so-called amblyopias. Since his day, however, a different meaning has been attached to this term by most authorities who, speaking generally, regard amaurosis as an advanced de-

gree of amblyopia—a nearer approach to a condition of complete blindness.

The designation of a diseased condition by one or more of its symptoms is to be deprecated and to be avoided when possible, but inasmuch as the terms toxic amblyopia and toxic amaurosis, not only describe the causation of the trouble, but also indicate their most prominent symptoms, they have something to recommend them. Certain French writers have attempted to avoid the difficulty by dividing this class of affections into two categories: one they term *névrite rétro-bulbaire* and the other *amblyopie toxique*, but as, in the opinion of the writer, many of the cases included in the former division probably belong to the latter, and as some of the latter are undoubtedly examples of the first class, the advantages of this nomenclature are not very apparent. Nor does the term *Intoxicationsamblyopie* used by German writers, tell us any more about the causation of this important division of disease. No doubt that rule in semeiology which reminds us that diseased processes should bear a name indicative of their pathology will finally prevail in this department of medicine, but as long as the precise structural changes in many or most cases of toxic amblyopia and amaurosis remain unknown, or are in doubt, these terms may be conveniently and consistently employed.

Toxic amblyopia, then, may be defined as that interference with vision produced by the use, in poisonous doses, of certain drugs. In toxic amaurosis, blindness, temporary or permanent, is the principal symptom.

At the outset, also, the writer would state his decided preference for prefixing the particular form of poison amblyopia or amaurosis with the name of the drug or drugs which have produced the disease in question, and in this monograph he proposes to speak of "tobacco amblyopia," "alcohol-tobacco amblyopia," "quinine amaurosis," etc., whenever these expressions can properly be employed.

CLASSIFICATION.

A SYMPTOMATIC CLASSIFICATION MOST USEFUL.—POISONS PRODUCING CHRONIC RETRO-BULBAR NEURITIS.—POISONS PRODUCING OTHER FORMS OF OPTIC NERVE AND RETINAL DISEASE.—AGENTS PRODUCING CHIEFLY MYDRIASIS.—POISONS THAT BRING ABOUT CONTRACTION OF THE PUPIL.—POISONOUS AGENTS WHOSE EYE SYMPTOMS ARE INCONSTANT.

To any one acquainted with the subject of poison amblyopia (and this term will hereafter be understood to include amaurosis where the two conditions are not contrasted,) it will be evident that the agents which produce deterioration of vision may be roughly divided into two classes. The first comprises those whose toxic affects are generally known to present certain constant factors and to be associated with in-

jury, more or less demonstrable, to the optic nerve and retina. The second group will be made up of those substances that produce a weakening of sight for the most part of an acute and transitory character, unaccompanied by physical signs of tissue change in the optic nerve which entitle them to be included in the first class. The following classification is in some respects empirical, but for our purposes, it is a useful and necessary one. The more important agents are italicised.

CLASS I.—*Poisons that directly affect the Optic Nerve.*

Division 1. Poisons that produce a chronic retro-bulbar neuritis—*alcohol*; *tobacco*; *alcohol-tobacco*; *carbon disulphide*; *haschisch*; *iodoform*; *arsenic* (?)

Division 2. Poisons producing other forms of optic nerve and retinal diseases—*lead*; *quinine*; *salicylic acid* and *sodic salicylate*; *cocaine*; *venom of poisonous reptiles*; *salts of silver*; *mercurical preparations*; *ergot*; *nitrite of amyl*; *nitrous oxide gas*; *male fern* and *pomegranate*.

CLASS II.—*Poisons whose Amblyopic Symptoms are Unaccompanied by Retinal or Optic Nerve Lesions.*

Division 1. Agents that produce chiefly mydriasis—*belladonna* and its products; *alkaloids from the datura stramonium*; *hyoscyamus niger*; *decomposed food*; *poisonous fungi*; *poisonous fish* (*ptomaines*; *leucomaines*, etc.); *sulphuretted hydrogen*; *carbolic acid*.

Division 2. Agents that bring about a toxic state whose chief ocular sign is a contracted pupil. These are *morphia* and other preparations of *opium*; *aconite* (?); *chloral* and its hydrate; *pilocarpine* and *jaborandi extracts*; *eserine* and *calabar bean*.

Division 3. Poisons producing various or irregular eye symptoms—*osmic acid*; *picric acid*; *santonin*; *digitalis*; *tea*; *chocolate*; *gelsemium*; *aniline dyes*; *nitro-benzol*; *emanations from pitch and coal*; *preparations of iron* (?); *iodine* (?); *arsenic*; *naphthaline*; *coffee* (?); *methy-lated spirits*; *ethylene chloride*; *sulphuric acid*; *potassic bromide*.

The list of agents whose use, local or general, is said to have produced visual disturbances is, thus, a long one, but in some instances the accounts given of the alleged amblyopia are very meager or very indefinite, or they come to us in the shape of physiological experiments made upon the lower animals. In some other cases the amblyopia was plainly due to local, mechanical irritation of the conjunctiva and cornea, or, like the ordinary myotics, to mere contraction of the pupil with or without interference with accommodation. Lastly, I have in several instances found isolated references to ocular symptoms supposed to be produced by toxic agents which could not be traced, or when traced turned out to be entirely misleading.

ETIOLOGY OF TOXIC AMBLYOPIA.

ALCOHOL.—TOBACCO.—ALCOHOL-TOBACCO.—CARBON DISULPHIDE.—CANNABIS INDICA.—IODOFORM.—LEAD.—QUININE.—SALICYLIC ACID AND OTHER SALICYLATES.—COCAINE.—VENOM OF POISONOUS REPTILES.—MYDRIATIC ALKALOIDS.—DECOMPOSED FOOD.—SULPHURETTED HYDROGEN.—CARBOLIC ACID.—MORPHIA AND OTHER OPIUM PREPARATIONS.

ALCOHOL.—Notwithstanding the assertions of some authorities, there can be no doubt but that the drinking of this poison is one of the most frequent causes of toxic amblyopia. Deficient vision from abuse of alcohol has been recognized by the earliest writers on this subject. For example Plenck, (2) among the cases of amaurosis gives prominence to *abusus spirituosorum*. Not to mention the exhaustive treatises of Uthoff (3) in late years, the reader will find the case for alcohol argued at length in Doebbelin's (4) thesis, published in 1850.

It is probable that the more dilute forms of alcoholic beverages taken in moderation (two or three glasses of beer or wine daily) alone rarely or never produce chronic amblyopia. Hutchinson (5) thinks that the impurities in and additions to spirituous liquors may be held accountable for a large part of the damage to sight, but it has yet to be established that such adulterations as amylic alcohol (fusel oil, potato spirit) and the empyreumatic oils or such ingredients as are commonly added to alcoholic liquids to form the liqueurs (wormwood in absinthe, hydrocyanic acid in maraschino, oil of juniper in gin, and so on,) as well as the elaborate concoctions know as "fancy drinks" are, *per se*, capable of producing the characteristic symptoms of this disease. It is well established that long continued and frequent indulgence in small quantities of spirits is more deleterious to eyesight than occasional "sprees." The persistent morning nausea, anorexia, muscular tremors, sleeplessness, and dull headaches that plague the chronic drinker are more likely to be associated with degeneration of the optic nerve tissues than are the more acute troubles of the deep but occasional drunkard. Of a 1000 cases of decided alcoholism, Uthoff found that 6 per cent. of them were sufferers from amblyopia; in 6.5 per cent. more he found optic nerve changes without amblyopia; in 5.3 per cent. pathological states of the optic nerve and retina, and in 12.2 per cent. other diseases of the ocular apparatus. So that 300 of these 1000 chronic alcoholics had eye affections of one kind or another.

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(TO BE CONTINUED.)

PROGRESS.

NOTES FROM FOREIGN OPHTHALMIC JOURNALS.

By CASEY A. WOOD, C. M., M. D.

PROFESSOR OF OPHTHALMOLOGY, CHICAGO POST-GRADUATE MEDICAL SCHOOL; OCULIST AND AURIST ALEXIAN HOSPITAL, ETC.

The bacteriology of the septic ophthalmiae [meaning by the term those pathological processes that are established in the eye as the result of metastasis in pyemia, septicemia (ulcerative endocarditis etc.), typhoid fever, cerebro-spinal meningitis, pneumonia] is considered in a most interesting and valuable article by Jean Mitval-ky (Des ophthalmies septiques. *Revue générale d'ophtalmologie* Nov. 1891.) to which we shall devote considerable space.

These ophthalmiae vary as much anatomically as they do clinically; some manifest themselves by recent retinal hemorrhages, some by purulent deposits, others by a rapidly spreading purulent choroiditis, while the graver cases are characterized by a panophthalmitis that ends, if the patient survive, in atrophy of the globe.

Premising that the micro-organisms found are chiefly staphylococci (Gayet) and streptococci (Wagenmann) the writer objects to the staining methods of Gram and Löffler as applied especially to the purulent collections in the disease. He prefers a solution of hemotoxylin in methylic alcohol and glycerin, which colors both the nuclei of the cells as well as the bacteria. The Grenacher or the Delafield formula acts rapidly and effectually. He claims for this process that no special preparation is required, that the microbes become more deeply stained as time goes on, and that it permits the use of Müller's fluid for the preservation of the globe.

CASE I. A woman, æt 24, had an attack of puerperal fever followed by a bilateral metastatic panophthalmitis and died on the fourth day. An autopsy showed septicemia and an endocarditis; in the blood and on the cardiac vegetations streptococci were demonstrated. The right globe examined under the microscope showed a purulent inflammation produced by embolic streptococci which were discovered in the retinal capillaries and precapillaries. The layers of the retina—especially the nervous lamina—were infiltrated by purulent masses. These purulent deposits had so compressed the vitreous that its diameter was reduced to one centimeter. Although the choroid was inflamed and had been affected by the deposits of pus, the latter being merely superimposed, it was not directly involved, so much so that one had the right to designate the condition as a "deposit of retinal pus." The retina itself was completely disorganized and with the exception of the *pars ciliaris retinæ* and at the papilla had been totally detached from the underlying choroid. The retinal fragments spread throughout the purulent deposits were readily recognizable as such and their situation and appearance seemed to indicate that the cell multiplication chiefly proceeds from them and had not occurred from the bloodvessel. Some portions of the retina were surrounded by colonies of cocci.

Hemorrhages were numerous and were discovered even in the thickest layers of the retina; they took the form of nodules in the nerve fibre layer

and were smallest in the ganglionic lamina. They were most numerous in localities free from microbic deposits. The central vein of the retina showed no change except engorgement of its branches and an occasional rupture but the walls of the central arterial branches presented distinct evidence of a purulent inflammation—these were *most recently affected* near the disk, indicating the commencement of the process at the peripheral capillaries and its spread toward the main trunks. Both the lamina fusca and the neighboring sclera were invaded by a liqueficient army of streptococci. The deeper layers of the cornea were the seat of a purulent inflammation but no bacteria were found there. This latter finding is explained by the fact that in such cases the inflammatory process advances far ahead of the bacterial colonies.

CASE II. A woman, aged 44, had pneumonia, followed on the sixth day by a left sided, metastatic, purulent choroido-retinitis terminating six weeks afterwards, in perforation of the globe beneath the rectus internus. The iris showed symptoms of a plastic inflammation with a fibrinous lenticulo-pupillary exudation. The latter was afterwards absorbed and was replaced by a hyphoema. The globe atrophied and on the 70th day measured only 16 mm. in its antero-posterior diameter. The sclera was hyperplastic; the iris was adherent to the lens and infiltrated with leucocytes; the choroidal debris and retinal remains, transformed into a liquid mass, filled the posterior chamber. Bacteriological cultures were prepared with gelatine and agar agar and from these the aqueous of rabbits was carefully inoculated. The result was in every case a panophthalmitis due to the presence of the staphylococcus pyogenes aureus, that microbe having been also demonstrated by Gram's method and in cultures made from the fluid contents of the atrophied eyeball.

CASE III. An apparently healthy man, aged 31, came down with an acute fever of the typhoid form. On the third day multiple subconjunctival hemorrhage appeared and on the fourth day he died. At the autopsy, six hours after death, a very advanced form of general tissue destruction was found; the cells of the organs seemed to be in a condition of marked parenchymatous degeneration. The blood corpuscles were largely destroyed and the blood itself had been converted into a dirty lymph mixed with powder-like grains. In this morbid liquid innumerable oval streptococci were readily demonstrated. Cultures from the blood and spleen produced the same microbe. All the membranes of the eye presented the same cellular, necrotic degeneration as the rest of the body; but these were, outside of the small vessels and of the hemorrhagic infarctions, no detached colonies of cocci to be found. The rods and cones of the retina had suffered most and minute depots of pus, surrounded by a detritus composed of these, formed the principal pathological change. Doubtless this was an obscure form of septic, purulent retinitis (confined to the two external layers) a sequel of exanthematous typhus.

Mitvalsky generalizes as follows on the subject of puerperal panophthalmitis: *in the puerperal infection the streptococcus (S. puerperalis, Fränkel) develops and multiplies in the blood until masses are formed that act as emboli and lodge in the capillaries and precapillaries of the retina and choroid as well as in the terminal system of the orbicularis ciliaris of Sattler. This is followed by a purulent inflammation showing a marked tendency to necrosis. Finally the multiplying microbes leave the blood-vessels, (partly propagating their kind in the neighboring tissues) and as the inflammation spreads diffuse their toxic products from the new as well as from the older colonies.*

In connection with the second case it is worthy of notice that the metastatic purulent choroiditis was not due to streptococci but to the staphylococcus pyogenes aureus.

The writer gives Knapp credit for his early observation and recognition of these metastatic processes and although he has not examined a case of purulent ophthalmia following cerebro-spinal meningitis (such instances must be rarer in Prague than they are in other clinics!) he hardly does justice to de Wecker's presentation of the probable cause of the metastasis. As we remember it, without reference to the *Traite Complet* (ii. 462), that author lays quite as much stress upon the *infective* character of the cerebro-spinal fluid as upon its pressure-overflow into and along the lymph spaces of the optic nerve.

Although Richard Hilbert's article (*Zur Pathologie des Flimmerscotoms, Centralblatt für pht. Augenheilkunde*, Nov. 1891.) on the Pathology of *Scotoma scintillans* does not throw any new or brighter light on the subject it gives a very good review of our knowledge of it which ought to be acceptable to both the oculist and general practitioner. He begins by dividing the disease, of which the temporary blindness is of course a mere symptom, into two kinds, (1) hemicrania angiparalytica, in which there is a vasomotor paralysis present, and (2) hemicrania sympathico-tonica, distinguished by "cramp" of the nerve.

As is well known this disease sets in irregularly and is usually unilateral, although (Schirmer) it may be double-sided. The interval between the attacks may range all the way from a few days to a year and they are accompanied by more or less headache affecting one side of the head—hence the connection with hemicrania. The transitory character of the blindness and hemicrania have earned for it the names scotoma scintillans, amaurosis partialis fugax (Förster), ocular migraine (Galezowski).

The subjective symptoms include more or less unilateral headache followed by a scotoma (or better "defect in the field of vision") which either lies in the center or affects one-half the field, that is divided into two halves by a vertical line. Finally a wavy, glittering light (sometimes colored) appears in the affected part and vision there is temporarily abolished. This phenomenon lasts from a few minutes to an hour or more. Martin's assertion that ocular hemicrania is always associated with astigmatism is false. With the exception of redness or pallor of the face no other subjective symptom has hitherto been described. However Schröder has noticed a unilateral paresis and anesthesia of an apoplectic character following an attack.

In but one case, described by Haab, was an autopsy made. The chief finding was an old apoplectic cyst in the right occipital lobe, directly under the cortex and in the region of the corona radiata.

The reason why this disease (which is more in the nature of a neurosis than an ocular affection) should frequently occur in the early stages of organic brain lesions is of course plain.

The following case is of importance inasmuch as a positive ophthalmoscopic finding was to be made out: Mr. A., otherwise perfectly healthy man, æt. 37, has suffered since boyhood from leftsided hemicrania sympathico-tonica. It sets in 2 or 3 times a year without warning and lasts from one-half to a whole day. With it nausea and vomiting. I saw him February 15th, when he was very anxious and complained as follows: At seven

o'clock the well known headache set in and about eight it disappeared. To his great distress he found, however, that a cloud occupied the centre of his left eye and that across it ran a fiery, yellow red zigzag line which waved back and forth from the center to the periphery of the visual field. He saw very little with the eye and was afraid of going blind. His face was pale and anxious and he shivered. The left pupil is dilated; all the mucous membranes in sight are bloodless. The temporal arteries are rigid and the pulse is hard and beats 58 to the minute. The headache is not so severe as usual and there is no nausea. On using the ophthalmoscope I found to my astonishment that the chief branches of the arteria centralis retinae were pulsating. The heart is normal and the urine free from albumen and sugar.

Amyl nitrite inhalations were given and in half a minute the face was red and the scotoma was not so marked. In five minutes the symptoms had entirely disappeared. The pulse increased to 80 and *the pulsation in the retinal arteries was no longer visible.*

Later on the patient had an ordinary attack of migraine but no accompanying scotoma.

From all published cases of scotoma scintillans we learn (1) that the subjective symptoms are very variable, (2) that aside from disease of the circulatory apparatus a distinct pulsation of the arteria cent. retinae may be present, (3) that the affection may be caused by coarse lesions in the occipital lobe as well as by visomotor changes affecting the light perceiving centers.

NOTES FROM AMERICAN OPHTHALMIC JOURNALS.

By B. E. FRYER, M. D.,

KANSAS CITY, MO.

OPTIC NEURITIS AFTER MEASLES AND INTERMITTENT FEVER.

D. HIRAM WOODS, (Vol. xxi, No. 1, *Archives of Ophthalmology*), reports two cases following measles and one as a result of intermittent fever. Dr. Woods states: "So far as I have been able to discover, neuritis after measles has been explained in three ways: (1) coincidence; (2) diseases of the visual centre in the occipital lobe with consecutive changes in the optic tracts and nerves; (3) basal meningitis. Cases are not numerous and autopsies less so, hence explanations are little more than 'hypotheses.'" "Undoubtedly there is such a disease as idiopathic optic neuritis, and it could easily occur during convalescence from measles as at any other time. Noyes (*Diseases of the eye*) expresses the opinion that "in theoretical statements too little stress has been laid upon the kind of idiopathic affection. It would however, be almost entirely negated as an explanation of such cases as those narrated, (a) if optic neuritis occurred frequently enough after measles to demonstrate that the latter had a causative influence, even if this influence could not be identified, or (b) if such conditions as are known causes of neuritis existed with measles and were caused by it." "As regards (a), most authors mention optic neuritis as an occasional sequela of measles. While not undertaking an explanation of its production, they evidently do not think it merely a coincidence. Proposition (b) must be accepted or rejected according to the evidence which can be produced in favor of the second or third explanations given above, or possibly, of some other not here mentioned."

Dr. Woods refers to other writers who have reported cases of optic neuritis and comments on the latter. Woods states that "cases of blindness from measles seem, then, of two kinds: (1) those showing no eye lesion until late in the history of the case; (2) those with marked neuritis from the beginning. The former are apparently due to cerebral lesion—probably vascular—with consecutive nerve disease; the latter to basal meningitis and neuritis."

THE ETIOLOGY OF INFLAMMATION OF THE EYE AFTER INJURY WITH FOREIGN BODIES.

DR. STANISLAWA POPLAWSKA, (*Archives of Ophthalmology*, Vol. xxi, No. 1,) gives the results of the examination microscopically of twelve eyes enucleated by Prof. Haab "for panophthalmitis after injury with a foreign body. Poplawska very truly states that "We lack detailed reports of the examination of pus in eyes with pan-ophthalmitis, of the results of pure cultures and inoculations, and of the condition of the microbes in question in the tissues of the eye."

Poplawska give his technique of preparing the enucleated eyes for the microscope. The results of his work be summarized as follows—after definitely describing the examination of each eye both macroscopically and microscopically. "In these eight cases microbes were positively found; in four others I was unable to find microbes, in spite of careful searching and the careful use of all three methods of staining."

"Eight of the twelve eyeballs examined showed microbes. They were without exception bacilli; and in each case showed but a single variety, so that there was never a mixed infection. The bacilli lay always in the me-

dium which contained the foreign body, viz: the vitreous, and in spite of careful searching were never found in the anterior chamber, iris retina or choroid. In the vitreous they were confined to a small locality, almost always immediately surrounding the foreign body."

Poplawska does not state as to whether in the four eyes in which no microbes were found there was pus.

Plates are given of the bacilli from the eight cases

REMARKS ON THE TREATMENT OF TRACHOMA BY THE EXPRESSION OF THE MORBID SUBSTANCE WITH A ROLLER FORCEPS, BASED ON A SERIES OF 114 CASES.

DR. H. KNAPP, (*Archives of Ophthalmology*, Vol. xxi, No. 1.) refers to the method for the ordinary treatment of trachoma as being unsatisfactory and tedious. He gives a wood cut of his roller forceps and describes his method of using it.

Of the 114 cases treated there were 16 cases of follicular catarrh, 64 cases of follicular trachoma, 22 cases of diffuse trachoma, 10 of cicatricial trachoma, and 2 cases of horny summer granulations.

Of the 16 cases of follicular catarrh, fifteen were cured. Fifty-four of the cases of follicular trachoma were cured, and of eight no record was given, but a cure was believed to have occurred. Of the 22 cases of diffuse trachoma, seventeen were cured, three did not report after treatment, one had a relapse, one had an attack of acute conjunctivitis six months afterwards, but no return of the granulations. Knapp states in reference to his forceps: "The newer instruments have conical pivots which dip into corresponding depressions. Tiemann & Co., proposed also to make an instrument with longer limbs of the stirrup and a set screw to remove and cleanse the pivots and sockets. At my suggestion they made the branches a little longer and somewhat elastic so that the roller can be removed and reinserted."

[Knapp's roller forceps is of the utmost advantage in the treatment of trachoma, a disease hitherto the *bête noire* of ophthalmic surgeons. My experience with the forceps has been exceedingly satisfactory. B. E. F.]

TWO CASES OF PAPILLOMA OF THE CONJUNCTIVA ENCRDACHING UPON THE CORNEA, are reported by Dr. F. H. SIMS in the *Archives of Ophthalmology* Vol xxi, No 1, which were operated on in Professor Fuch's clinic. The reporter states: "The interest in these cases is increased by the fact that in both instances the growths encroached upon the cornea, so far in one case as to materially disturb vision on the eye upon dilatation of the pupil."

"A careful search into the literature of the subject reveals the fact that only ten cases of well marked papillomatous growth of the conjunctiva have been reported. Most of these had their origin from the caruncle, semi-lunar fold or from the palpebral conjunctiva, usually near the margin of the lid. In four instances, however, the bulbar conjunctiva was involved either primarily or by extension of the growth from the palpebral portion. In none of these cases was the limbus or cornea involved, which is more remarkable, as mentioned by Prof. Fuchs, when we consider that the limbus is the only portion of the conjunctiva where papillæ are to be found."

TRAUMATIC PANOPHTHALMITIS; ENUCLEATION; UNCONTROLLABLE HEMORRHAGE; DEATH.

DR. J. H. THOMPSON, (*Archives of Ophthalmology*, Vol. xxi, No. 1.) relates a case in which death from uncontrollable hemorrhage occurred on the seventh day after enucleation.

NOTES FROM LARYNGOLOGICAL AND RHINOLOGICAL LITERATURE.

By M. D. LEDERMAN, M. D.,

SURGEON TO THE NOSE AND THROAT DEPARTMENT OF THE YORKVILLE HOSPITAL FOR DISEASES OF WOMEN AND CHILDREN; CLINICAL ASSISTANT TO THE THROAT DEPARTMENT OF THE MANHATTAN EYE AND EAR HOSPITAL, ETC., NEW YORK.

CASE OF A BRONCHIECTATIC ABSCESS DUE TO THE IMPACTION OF AN O'DWYERS TUBE.

G. A. SUTHERLAND, M. D., (*The Lancet*, vol. i, No. 3569, 1892) reports a case of a patient, male, aged seventeen years and a half. Was struck on the front of the neck, by a piece of wood. Complained of pain in the throat and difficulty in swallowing. Tenderness on pressure and voice husky. Cough followed with mucoid expectoration. Laryngeal stridor with tracheal obstruction were noticed. Laryngotomy was performed, and the dyspnoea was somewhat relieved. The laryngotomy tube was removed and intubation of the larynx was employed for the relief of stenosis, which had supervened. During a fit of coughing, the string attached to the tube broke and the tube passed down into the trachea. Several efforts were made to remove it, but were unsuccessful.

For three months the tube lay in the air passages without causing any symptoms by which its presence could be recognized. At the end of this time the patient began to expectorate pure pus; sometimes amounting to fifteen ounces per diem, not offensive, and in which no tubercle bacilli could be found. Cough was a constant symptom. During a severe paroxysm of coughing, the patient felt something move in his chest, and the breathing which was loud and blowing, suddenly became quiet. The violent fit of coughing lasted three hours.

The area in which the movement of the tube was felt, was slightly to the left of the sternum about three inches from its lower end, in the left side. There was a distinct wave of pulsation over the whole cardiac area with each beat, and the apex was felt in the fourth intercostal space, just outside of the nipple. Over the whole of the left side of the chest there was dullness, well marked, with bronchial breathing which was most intense over the upper lobe. Vocal resonance was slightly increased. Three inches of the sixth rib, on the left side in the axillary region, were resected. The aspirating needle drew offensive pus. The wound was enlarged and the finger introduced into the large abscess cavity. No foreign body could be detected. The cavity was packed with cyanide gauze. Bleeding followed the removal of the drainage tube and dressing a few days later, and the patient died from the hemorrhage.

The post-mortem examination revealed the greater part of the lower lobe destroyed by the abscess, and the part remaining was collapsed and airless. The O'Dwyer's tube was found in the left bronchus, the head of the tube lying three quarters of an inch below the bifurcation of the trachea, and the body passing down into the bronchus leading to the lower lobe.

TONSILLOTOMY AND ITS THERAPEUTIC EFFICACY.

DR. J. M. W. KITCHEN, of New York, is an advocate of the Mackenzie tonsillotome. Cases of severe hemorrhage, he states, usually result from using a keen-bladed knife, or from tearing the tonsil or part of it, from its bed.

With the Macænzie instrument, you crush as well as cut, so as to lessen the danger of hemorrhage. It can be used as a tongue depressor and mouth-gag. The author uses cracked ice for the controlment of hemorrhage. Pressure and torsion are advised. For several years he has performed tonsillotomy to abort an attack of quinsy, and with success. He recommends to operate at the beginning of an attack before he fancies the neighboring parts have become too swollen. This method, he states, will save many hours of agonizing suffering. He mentions a lengthy list of affections which this operation will remedy.—*Medical Record*, Vol. 41. No. 3.

CASE OF HERPES OF THE LARYNX.

R. E. SCHOLEFIELD, A.M., M.B., reports a case of a male, forty-one years of age. The patient when seen was suffering from a curious combination of dyspnoea, difficulty in swallowing, and nervous excitement. Symptoms came on suddenly. Patient complained of tightness in his throat, with hoarseness and cough. Large quantities of saliva flowed over his lips. Great pain was a peculiar feature. Pressure anywhere between the left side of the larynx and the ear was not only extremely painful, but also caused the patient to roll about in the most extraordinary contortions. Hydrophobia was thought of, but the evidence was wanting. Examination revealed the fauces reddened, uvula oedematous, no ulceration present; clear glassy mucus was secreted rapidly from the naso-pharynx. With the aid of cocaine the laryngoscopic examination disclosed the following: The true and false cords were normal, as was also the right arytenoid and aryteno-epiglottic fold. The left was redder than normal, and presented a mass about the size and shape of three peas more or less fused together, and capable of being moved over with a probe to either side. The mass resembled a polypoid degeneration of the mucous membrane. Posterior rhinoscopy revealed nothing further. Three days from first examination, the mirror showed a small bulla, filled apparently with pus, seated on the summit of the enlarged and swollen arytenoid. A patch of herpes was now observed about the left nostril and upper lip. On the first appearance of the throat symptoms, the temperature was 103.4°. Condition gradually improved, and patient was discharged in two weeks. Treatment consisted of cold compresses to the neck, and an ether draught.—*The Lancet*, Vol. 1, No 3570, 1892.

LYSOL—This new disinfectant and antiseptic, is recommended as promptly arresting the development of micro organisms. It has been advised in the treatment of rhino-pharyngeal and laryngeal diseases, as well as in affections of the middle and external ear. It is obtained by dissolving the fraction of tar oil which boils between 190° and 200° C., in fat, and subsequently saponifying with alcohol. It is a clear brown, oily liquid, and contains fifty per cent. of cresols. It can be mixed readily with water, and forms clear solutions with glycerin, alcohol, chloroform and various other fluids. Tuerbrueger recommends half to one per cent. solution for the hands, and one quarter per cent. for instruments. It is one-eighth as poisonous as carbolic acid, and cheaper. Pee recommends a one per cent. solution in midwifery and gynecology, and says that a 1 to 200 solution destroys streptococci in fifteen minutes. His experience with it has been very favorable.

MONOCHLORPHENOL—Is recommended by Dr. Passerini for inhalation in phthisis.—*The Lancet*, Vol. 1, No. 3570, 1892.

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EDITED BY

JAMES P. PARKER, M. D.,

KANSAS CITY, MO.

IN CONJUNCTION WITH

DR. B. E. FRYER, KANSAS CITY, MO.

DR. T. MELVILLE HARDY, CHICAGO, ILL.

DR. CASEY A. WOOD, CHICAGO, ILL.

DR. M. D. LEDERMAN, NEW YORK.

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CLINICAL NOTES.

MELANCHOLIA AGITATA. TUBERCULOSIS. ABSCESS OF EACH CORNEA.
SUCCESSFUL SAEMISCH'S SECTION.—A woman, aged 51, was admitted to the insane wards of the Philadelphia Hospital on account of melancholia agitata. She refused food and nasal feeding was necessary. The mental distress was extreme and the agitation incessant. Late in June, of 1890, a corneal ulcer appeared upon the right side, and rapidly developed into an abscess occupying more than half of the cornea. A smaller and somewhat circularly shaped abscess developed upon the left side. Saemisch's section was performed in each eye, and the sloughs removed. In spite of the fact that it was necessary to confine the patient in a jacket, and that her nutrition was very much below par on account of the difficulty experienced in giving her food, the eyes made an uninterrupted recovery, healing finally with a surprisingly small scar, in neither case directly central, so that the patient saw very well although it was impossible to ascertain with test-types the exact state of vision. Previous to the section and the removal of the pus, vision was reduced to light perception. After the operation she recognized the attendants and could find her way perfectly along the corridors of the ward. Some months after this the patient died, and at the autopsy there was general miliary tuberculosis.

MALARIAL KERATITIS.—A man, aged 59, was admitted to the wards of the Philadelphia Hospital with intermittent fever. Four weeks before he applied for treatment he experienced his first chill. This occurred twice a day, and two weeks after the first chill the eyes began to inflame. He had been

under massive doses of quinine, and when he was admitted to the eye ward there had been no chills for a week. Four years ago he had experienced a precisely similar attack.

The following lesions were present in each cornea: There were two somewhat peripherally situated patches of ulceration consisting of irregularly branched furrows surrounded by a bank of minute, grayish infiltration, which with the corneal loupe resolved itself into innumerable points (needle-stuck appearance). The general effect was that of a whitish groove with a number of branches capping a sloping embankment of grayish nebula. Along each ridge there were several saturated whitish spots. The corneas were anaesthetic. In each eye the optic disc was a vertical oval, and there were an underlying conus and slight epithelial choroiditis. The refractive error was a high, hypermetropic astigmatism.

The treatment consisted of rest in bed, a mercurial purge and full anti-periodic doses of quinine followed by Fowler's solution to the point of tolerance, and locally, eserine drops and touching the ulcerated areas with a solution of nitrate of silver, 10 grains to the ounce, after a gentle curetting. The result of the treatment was entirely satisfactory, cure being obtained in about ten days.

PAPILLITIS, PARALYSIS OF THE RIGHT EXTERNAL RECTUS AND GLYCOSURIA IN A CHILD AGED FOUR.—J. A., a girl, aged 4, was admitted to the Children's Hospital on account of rapidly failing vision. The following history was obtained: The patient was one of three children, coming in the middle of the series. At birth she had snuffles, but no rash. At six months a vaginal discharge appeared, probably leucorrhœa, which has continued ever since. Many pimples resembling acne pustules have appeared upon the buttocks. There have been several attacks of sore throat with patches on the tonsil. Both mother and father have had intermittent fever, and live in a malarious region. The mother denies miscarriages. Eight weeks before admission the child began to complain of headache, and in the afternoon had chills and fever. Four weeks later there was convergent strabismus of the right eye, and three days after this the vision failed rapidly and the child knocked against articles of furniture as it walked across the room. Since then the failure of vision has become very marked.

On admission to the Hospital the vision was reduced to counting fingers imperfectly. Both discs were choked, the apex of the grayish swelling on each side being +4 D. There were no hemorrhages. The arteries were unchanged in size; the veins full and tortuous. The external rectus muscle of the right eye was completely paralyzed. The lungs and heart were normal and the spleen not enlarged. The urine was of a pale, straw color, had a specific gravity of 1026, and contained a small amount of sugar, but no albumin.

The treatment consisted of rest in bed, and at first ascending doses of iodide of potash. These, however, produced no amelioration of the symptoms and were replaced by inunctions of mercurial ointment. In fifteen days the apex of the swollen disc was +2 D, and the paralysis of the external rectus muscle had entirely disappeared, so that there was complete excursion of the eyeball in all directions. At this time the sugar had disappeared from the urine. The swelling of the discs rapidly subsided, leaving them pallid but not atrophic. In each macula, however, there were several splotches of fatty de-

generation capped with a few shining cholesterin crystals. The vision could not be tested with types, but the child apparently saw as well as the other children in the ward.

The rapid subsidence of the symptoms under the influence of mercurial inunctions, owing to the absorption of what undoubtedly was a syphilitic lesion at the base of the brain, so situated as to press upon the right abducens nerve, and the association of glycosuria are interesting points.

G. E. DE SCHWEINITZ, M. D., Philadelphia.

THE EXTRACTION OF DOUBLE CONGENITAL CATARACT; SYMPATHETIC INFLAMMATION AFTER SECOND OPERATION; RECOVERY.

John S., age 29, was admitted to the wards of the Jefferson Hospital November 15, 1891, for the cure of partial blindness from which he had suffered since birth. His vision which had not changed for better or for worse within his recollection permitted the performance of certain of the duties of a farmer's helper. He could safely walk about in familiar places, feed cattle and do other work which required power to see large objects only. He was unfamiliar with letters, numbers, watch dial, faces of his daily associates and other objects requiring for their recognition vision better than $\frac{2}{20}$. Diagnosis: Congenital stationary lenticular lamellar and central capsular cataract.

The question of discision or extraction here presented itself. Was the subject too old for a needle or too young for an extraction operation? Were the lenses hard or soft? In favor of discision were the patient's perfect physical health, his boyishness, undeveloped mental powers, incompleteness of opacity, cortex transparent and the character of the lesion (congenital and stationary.) In favor of extraction were his age, within the limit of 25-30 years, usually accepted by operators as the earliest range of years in which extractions can be successfully done, saving of time, accomplishment of the object sought by a single operative procedure and the avoidance of probable inflammation of iris and neighboring tissues, possibly glaucoma, excited by the presence of sections of the lens matter in the anterior chamber. Extraction of one lens was resolved upon. Prof. Thomson performed the modified Graefe operation with iridectomy on L eye. The lens was expelled in the usual manner and almost in its entirety. Upon careful examination after extraction the *outline of the opaque lamellar surrounded by a zone of transparent lens substance* was distinctly seen: an interesting and surprising fact which in my experience was unique. Healing occupied the usual time and was without noteworthy incident. Two weeks afterward the second (R) eye received the same treatment. The lens presented an exactly similar and extraordinary condition. The healing, however, was not so favorable. An obstinate and intractable hernia of the iris, with severe inflammatory symptoms developed in the outer angle of the cut and soon after its appearance the other eye (L) became hyperemic and excessively painful from plastic iritis. After a few days unavailing medication it was decided that the hernia had caused sympathetic inflammation. This hypothesis was more certainly established by the fact that both eyes rapidly and entirely recovered after the hernia was cured by operation. When all irritation had subsided the congenitally opaque capsules with a small residue of lens and the products of inflammation were extracted through small cuts made in the cornea near the sclerotic borders.

The final result exceeded expectation. With $\frac{1}{10}$ D vision equalled $\frac{20}{20}$.

This briefly reported clinical case presents two interesting, instructive and practical features:

- 1st. The complete sclerosis of the lenses in a man under 30 years of age.
- 2nd. Sympathetic inflammation directly traceable to hernia iridis and its cure by iridectomy at the site of the hernia.

H. F. HANSELL, M. D., Philadelphia.

SEVERE "COMMON COLD" DUE TO REFLEXES OF THE EYES.

In the *Medical News* of March 12th, 1892 Dr. George M. Gould relates the striking case of a man forty-six years of age who had suffered every year, the entire winter through for eighteen years with severe "cold," and who has enjoyed immunity from the distressing condition during the past two years in which he has had his refractive error corrected.

With paralyzed accommodation his ametropia was found to be:

R.—Sph. 2.25 D. —Cyl. 0.75. D. Ax. 140°.

L.—Sph. 4.00 D. —Cyl. 1.50. D. Ax. 65° with 6° of exophoria.

He was given for continuous use:

R.—Sph. 0.75 D. —Cyl. 0.75. D. Ax. 140°.

L.—Sph. 2.00 D. —Cyl. 1.50 D. Ax. 65° with prisms 2½° each eye base in.

Nearly a year later he was given a pair of stronger lenses that better distant vision might be obtained. The results were anything but satisfactory, for he caught cold the first day his stronger lenses were worn. During the three months following the experiment of wearing the stronger lenses was repeated many times, but it was found that an hours use always caused a return of his old time trouble of the nose and throat, consisting in coryza, pharyngeal and congestion, changed timbre of voice, etc. These symptoms always disappeared in a few hours upon a change to the weaker lenses. This fact he has since proved many times, and he has also found that whenever his spectacles are maladjusted, so that the cylinder axes are rotated out of place, the nasal irritation begins to be felt.

CASES OF OBSTRUCTIVE DISEASE OF THE LACHRYMAL PASSAGES. At a meeting of the Philadelphia County Medical Society held March 23rd, Dr. George E. De Schweinitz reported a number of cases giving full account of the associated intra-nasal lesions which in the series of cases at least the lachrymal obstructions were due.

THE USE OF GELATINE DISCS IN THE EYE. At the same meeting of the Philadelphia County Medical Society, Dr. John S. Stewart presented a paper in which he advocated the use of Homatropine and Cocaine combined in this form for purposes of refraction. A considerable experience in the use of these preparations had led to the conclusion that paralysis of accommodation can be affected with a much smaller amount of the homatropine, when applied in this form, than is possible where a solution is employed; and it was observed, also, that chorio-retinal irritation occurred with much less frequency.

PROFESSIONAL NEWS, SOCIETY MEETINGS, ETC.

Dr. George M. Gould, of Philadelphia, has been appointed the English-speaking Secretary of the Section on Ophthalmology for the meeting of the Pan-American Congress to be held September 6, 7, and 8th, 1893 under the Presidency of Dr. Wm. Pepper; the Chairman of the Section is Dr. Julian J. Chisholm, of Baltimore, Md.

The physicians of the Pacific Coast, whose practice relates to the Nose, Throat and Ear, are preparing to form an association for disseminating the latest information gained by observation regarding the etiology, pathology and treatment of these organs. Dr. Thos. F. Rumbold, 734 Sutter Street, San Francisco, has issued a circular urging the formation of the association.

The Iowa State Medical Society will hold its Forty-first Annual Session at Des Moines, Wednesday, Thursday and Friday, May 18, 19 and 20th. The printed programme contains the titles of about sixty papers, including reports, and the Secretary, Dr. J. W. Cokenower of Des Moines, states that other papers are promised.

"THE INTERNATIONAL OCULISTS' CASE RECORD AND ACCOUNT BOOK" is the title of a very complete, compact and systematic Case Book that has just been published. The author is Dr. Robert D. Gibson, Youngstown, Ohio, to whom all orders for the book should be addressed.

The New Medical Law of Nebraska; Proceedings of the State Board of Health, and a List of the Physicians of Nebraska has been published in pamphlet form by Carl D. Beghtol, of Friend, Nebraska. Price, \$1.25.

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